

ATLAS OF COMET HALLEY 1910 II

NASA SP-488

ATLAS OF COMET HALLEY 1910 II

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ACKNOWLEDGMENTS

This work is the outgrowth of a long collaboration with the late Karl Wurm. He had acquired a large collection of original plates, film copies, and photographs of comets including many of Comet Halley. This collection provided the motivation for preparing the Atlas. We dedicate this Atlas to him.

It is a pleasure to thank the many persons and institutions who made material available and assisted us in preparing the Atlas.

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A major contribution to completing the Atlas was made by Priscilla Struthers. Without her the many frustrating and time consuming tasks associated with compiling all tables, arranging the photographs in order, and checking and correcting errors would have been nearly impossible.

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INTRODUCTION

The 1986 apparition of Comet Halley has aroused considerable interest in comets. This comet is unique, because it is the only bright predictable comet in the solar system. Comet Swift-Tuttle 1862 III is of comparable brightness, but has an uncertain period of about 120 years and has had only one recorded appearance. The extensive search for the recovery of Comet Halley, which began in 1977 and culminated in the October 1982 observation, attests to the world-wide interest that the comet has generated. Further evidence of scientific activity stimulated by Comet Halley includes the launch of several space missions to study the comet and the organization of the International Halley Watch (IHW). Because of the long lead time for organizing research, detailed planning and coordination of observations could be initiated—two objectives of the IHW. A third objective is to arrange for reduction, publication, and archiving of the observational data. This last goal is extremely important in view of the generally limited reduction and analysis of cometary observations.

The case of Comet Halley 1910 II is a prime example of this problem. The Astronomical and Astrophysical Society of America attempted to organize a program that would provide a photographic history of the 1910 apparition but, with the exception of a published list of 1,580 photographs from 38 observatories, no further action was taken. A comprehensive study was begun by H. D. Curtis and a preliminary report was published in 1910. After a passage of several years, N. T. Bobrovnikoff completed the task and published the results in 1931.

With the impending return of Halley's Comet in 1986, a major effort began to collect the material obtained at its last appearance in 1910. This material displays the evolving coma and tail phenomena, and is useful for comparison with the present quantitative studies of spectroscopic and structural phenomena. The opportunity to extensively investigate a bright comet at two consecutive appearances by using the wealth of observational information gathered in 1910 and comparing it with the material obtained in 1986, makes this program especially valuable.

A comprehensive display of this material has never been available for analysis, therefore, much new information on the coma and tail of Comet Halley can be expected. First results, already obtained, are accurate measurements of the 1910 comet positions which improved the orbit for early detection of the 1986 return. In addition, digitally processed images have been used to investigate near-nuclear phenomena from which a rotation period was derived.

In many instances, tracking down the original plates proved to be extremely difficult and sometimes impossible. A great number of photographs had been destroyed during the past seven decades through circumstances such as war and fire, or when old plates' vaults were

“cleaned up.” Other photographs were completely lost—buried somewhere in the archives of older observatories, borrowed and never returned, or discovered in such poor condition that they were completely unusable. In spite of these problems, the significant body of plates that were obtained proved to be of immense value despite several obvious deficiencies such as a lack of calibration and nonuniform background. Original photographic plates or good film copies of originals have been obtained from a number of observatories listed in Appendix B, Table 1. Table 2 shows the variety of instruments used. Appendix A, Figure 1 shows the geographical distribution of the observatories.

Images in the Atlas are arranged in chronological order by day. Days that have multiple images with varying scales are arranged in two sequences. Photographs showing tail phenomena are first, followed by photographs obtained with longer focus instruments showing the head or near-nuclear region. A natural dividing line between the two sequences was at a plate scale of about 100 arc-sec/mm. For plate scales near 100 arc-sec/mm, an image was placed in either sequence depending upon its general appearance. This division enables one to follow the development of the tail and the coma and to see the connection between structures in the coma and tail.

The following features of the Atlas need to be noted. The times listed for the photographs are GMT in Astronomical Time as used during the 1910 apparition, for which the astronomical day began at noon. In 1925, the astronomical day was set to coincide with the civil day beginning at midnight. Therefore, 0.5 day must be added to convert Atlas times to current usage. In many instances, this time conversion carried the observation time past midnight into the following day.

The photographic and printing processes are such that not all details discernable in the plate or negative copy can be reproduced in a print. To counteract this problem, multiple prints were made to show structures in the heavily exposed head region and in the fainter tail. In most cases where this procedure was necessary, two prints were made although sometimes three were used.

The multiple print procedure, though useful, still fails to bring out the wealth of detail in many plates or negative copies. Anyone who wants to study fully some of the phenomena illustrated in the Atlas is advised to use the original plates. Because of the global distribution of observatories and the easily understood reluctance of the observatories to ship fragile plates, this approach is not likely to be feasible. As a substitute, Goddard Space Flight Center has a set of negative copies of the original photographs that can be made available to other investigators, thus providing a single, albeit, secondary source.

Table 3 catalogs all Atlas photographs from the 1910 apparition beginning with the recovery photograph of September 11, 1909 by Max Wolf at Heidelberg (Figure 1, Chapter 3). The table includes in successive columns: Figure number in Chapter 3, 1910 photographs; year; month; day and time of midexposure in decimals of a day; observatory; camera; plate number with number of prints in parentheses; duration of exposure in minutes; heliocentric distance of comet, r , and geocentric distance, Δ in A.U.; elongation, θ and phase angle, β , Sun-comet-Earth in degrees; and scale in km/mm. The scale is written in terms of exponent to the base 10. Because of variations in reproduction size, the scale may vary by up to 10 percent from the actual value. All Yerkes plates taken with the array of cameras on the Bruce mount were given the same number, so up to four images can have the same plate number. The camera column will indicate which camera was used. For some photographs the time of midexposure was uncertain. In any research where times are important, the comet position should be checked against accurate ephemeris data.

A number of Cordoba and Lowell plates had multiple short exposures. These plates are denoted, for example, as Lowell P7-187 A ... P7-187 E on successive rows for the five exposures because all midexposure times and exposures were known. When the individual midexposure time was not available, the plate was listed as Lowell P7-307 A, B, C, D on one row. The listed midexposure time is now for the entire sequence and the exposure duration is the total for the four images.

Drawings of Comet Halley, made from visual observations in 1835 and 1910, also have been included in the Atlas. These drawings add to the completeness of a presentation of the appearance of Comet Halley. In addition, most of the drawings are not easily accessible in their original publications. Chapter 4 contains a comparison of selected 1910 photographs and drawings. Chapter 6 presents 1910 spectra from Lick and Lowell Observatories.

Some remarks are in order concerning the prints. With the exception of some Mt. Wilson and all Tokyo and Dairen observations, all prints are black on white to more clearly show details of structure. Nearly all photographic images have the comet head on the left side of the page. Considerable care was taken to have all images reproduced with the same orientation although the use of negative copies of original plates sometimes caused complications. A number of reversals were detected during the several stages of preparing the camera-ready layout for the printer. Some reversals were probably not detected. It was discovered too late to change them, that the white on black Mt. Wilson images were all reversed. These are marked in the figure captions with an "R".

Many defects occur in the Atlas prints because 75-year old plates or film copies of these plates were used. Most of the defects such as streaks, scratches, and blotches are obvious. On a number of plates, small arrows identify defects. Some of the plates contain ink marks from earlier investigations. We do not expect any of the defects to cause confusion with cometary phenomena, although in a few instances cometary features are obscured.

The complete set of digitally processed images by S. Larson and Z. Sekanina appear in Chapter 5. In Chapter 3, some of the Mt. Wilson photographs, both the original and the processed images, are shown to the same scale. These images are noted in the figure captions and are identified in Table 3 by an exclamation point after the number of images for that figure (e.g., Figure 319 Mt. Wilson MRW 80(2!)).

Comet Halley 1910 was observed in Japan at the Tokyo Astronomical Observatory and by an expedition to Dairen, Manchuria. The plates were destroyed in World War 2. These observations were obtained at an observing longitude and time which filled the large gap between Honolulu and Kodaikanal, India. Therefore, we have reproduced copies of images from the Annales de l'Observatoire Astronomique de Tokyo, Vol. V, 1911. Because of the reproductions from a 75-year old journal, the Tokyo and Dairen figures are of poor quality.

1

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

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COMET HALLEY 1835 III

Figures 1 through 12 are visual observations of Comet Halley 1835 III by W. Bessel (Astronomische Nachrichten, 13. p. 185, 1836).

Bessel, remarking on the visual appearance of Comet Halley 1835 III, noted that "light material" seemed to be less on the side of the center away from the Sun. He also identified oscillations of the emitting light cone that were clearly observed. (See Figures 3 through 12.) In all pictures the Sun is positioned vertically over the comet nucleus.

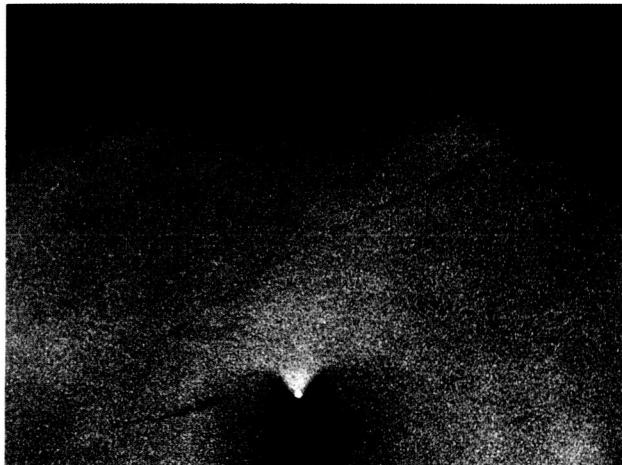


Figure 1. October 2.972



Figure 2. October 8.938

Figure	Date	r (A.U.)	Δ (A.U.)	α	km/mm
1	1835 October 2.972	1.08	0.44	67°3	1400
2	1835 October 8.938	0.99	0.25	84.4	700

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ATLAS OF COMET HALLEY 1910 II



Figure 11. October 22.695



Figure 12. October 25.698

Figures 13 through 26 are visual observations of Comet Halley 1835 III by H. Schwabe with a refractor of $f = 4.2$ meter focal length. (Astronomische Nachrichten, 13, p. 145, 1835).

Schwabe, remarking on the visual appearance of Comet Halley 1835 III, noted that the nucleus seems to emit light toward the Sun. The Sun pushes back this light-emitting matter in such a way that it separates into two parts which bend back in the shape of an arc to form the tail. The dark spot (behind the nucleus) can be explained by noting that only the side of the nucleus directed toward the Sun emits light.



Figure 13. October 10

Figure 14. October 11

Figure 15. October 15*

Figure 16. October 15*

Figure	Date	r (A.U.)	Δ (A.U.)	α	km/mm
11	1835 October 22.695	0.79	0.43	105°2	1300
12	1835 October 25.698	0.75	0.54	99.3	1700
13	1835 October 10	0.98	0.22	89.4	
14	1835 October 11	0.96	0.20	94.7	
15	1835 October 15	0.90	0.20	112.5	

*See Bessel's drawing for October 15 (Figure 9).

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

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Figure 17. October 21



Figure 18. October 22,
5^h30^m p.m.*



Figure 19. October 22,
6^h p.m.*



Figure 20. October 23



Figure 21. October 25



Figure 22. October 26,
5^h5^m p.m.



Figure 23. October 26,
5^h15^m p.m.



Figure 24. October 26,
5^h30^m p.m.



Figure 25. October 26, 6^h p.m.



Figure 26. October 30

Figure	Date	r (A.U.)	Δ (A.U.)	α
17	1835 October 21	0.81	0.37	108°3
20	1835 October 23	0.79	0.44	104.6
26	1835 October 30	0.70	0.70	90.4

*See Bessel's drawing for October 22 (Figure 9).

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Figures 27 through 37 are visual observations of Comet Halley 1835 III by F. G. W. Struve, "Beobachtungen des Halleyschen Kometen bei seinem Erscheinen im Jahre 1835 auf der Dorpater Sternwarte," (Kaiserliche Akademie der Wissenschaften, St. Petersburg, 1839).

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Figure 27a

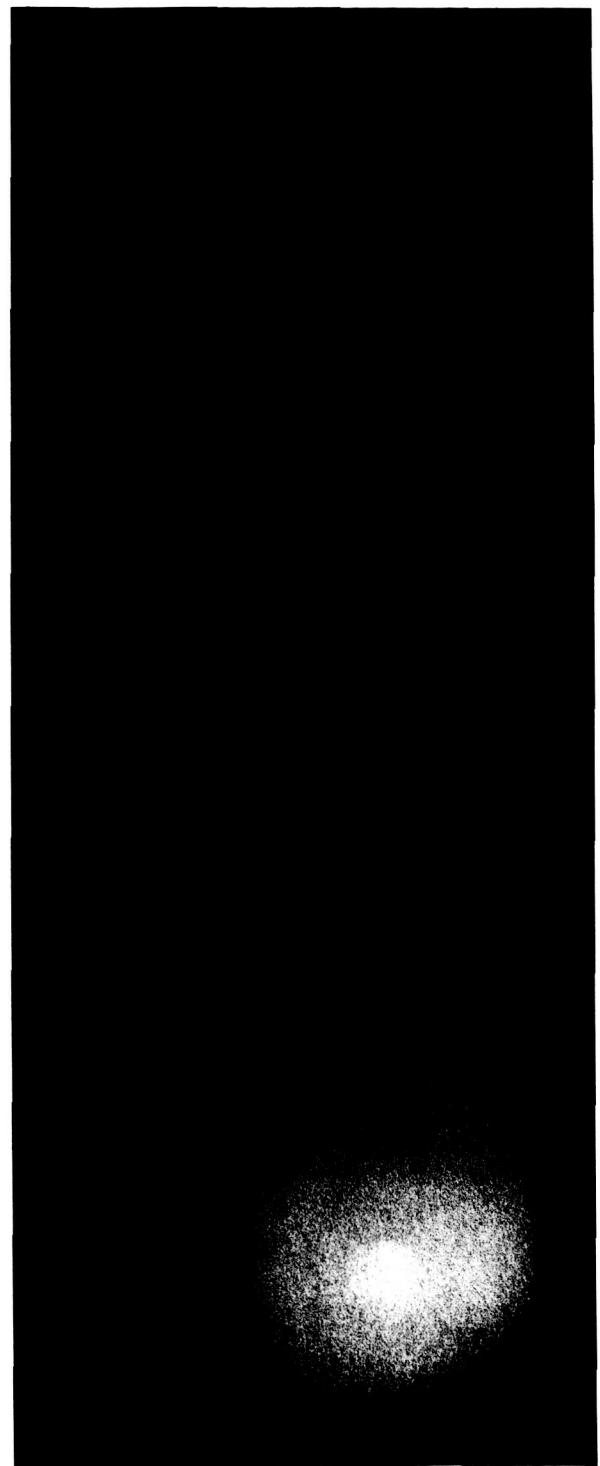


Figure 28a

Figure	Date	r (A.U.)	Δ (A.U.)	α
27	1835 September 29	1.15	0.58	119°
28	1855 October 3	1.08	0.44	113

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

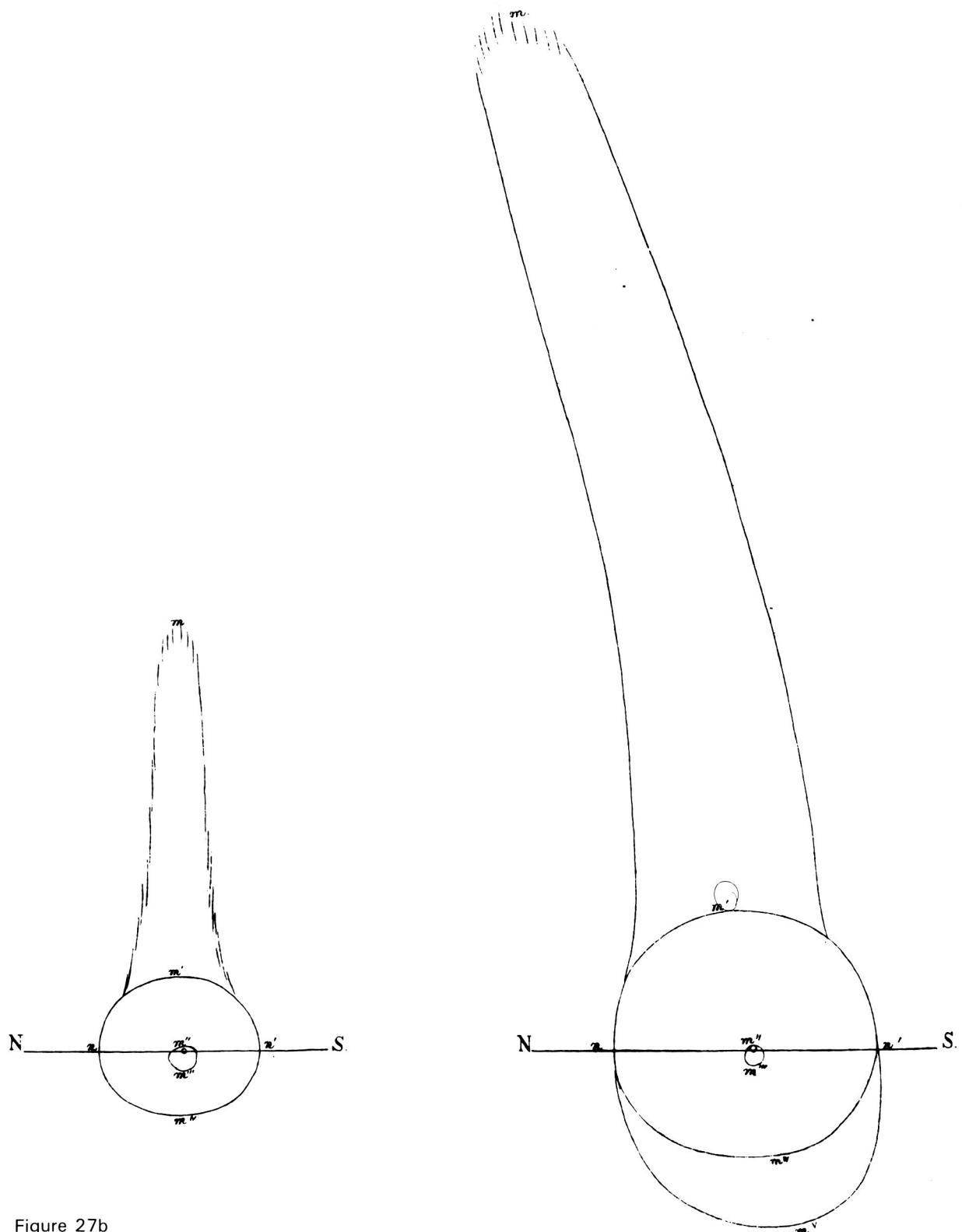
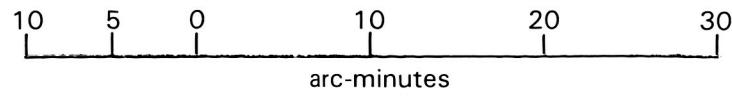


Figure 27b

Figure 28b



ATLAS OF COMET HALLEY 1910 II

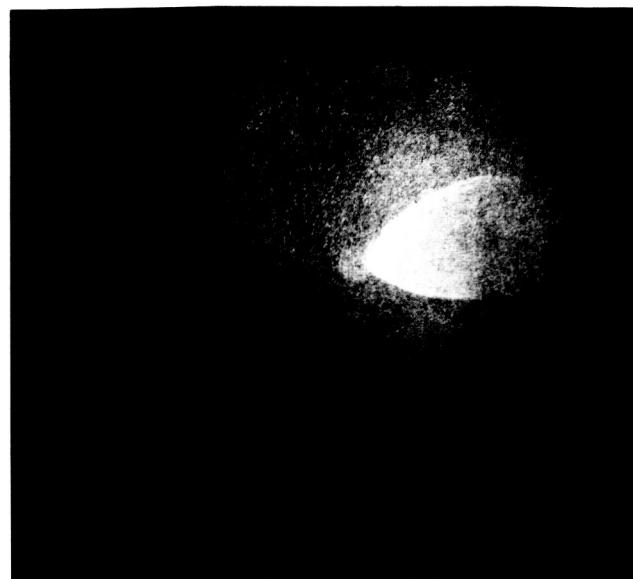


Figure 29a

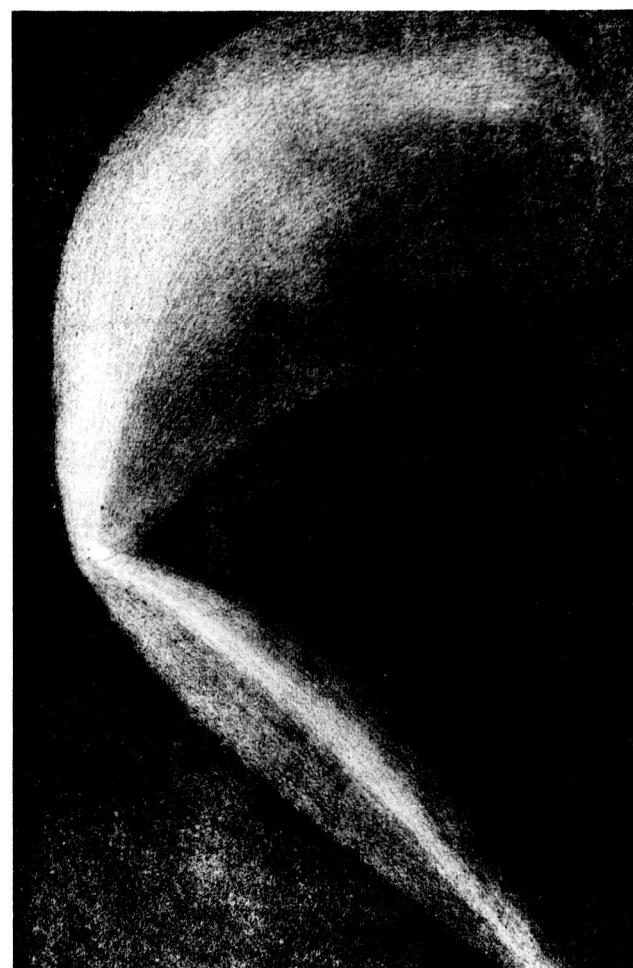


Figure 30a

Figure	Date	r (A.U.)	Δ (A.U.)	α
29	1835 October 8	1.01	0.27	99°
30	1835 October 9	0.99	0.24	95

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

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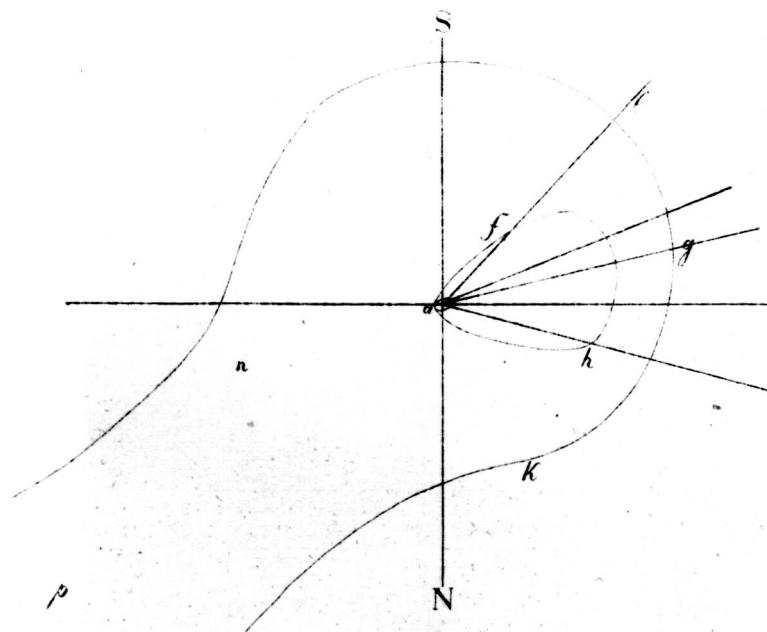


Figure 29b

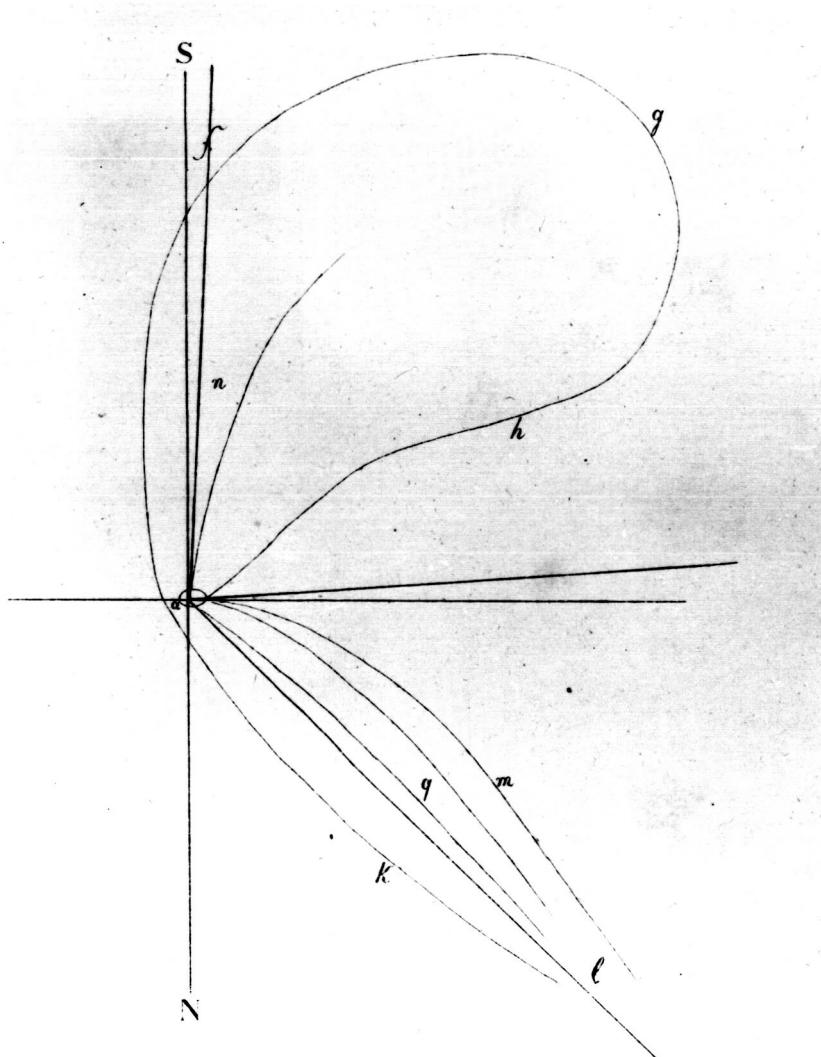
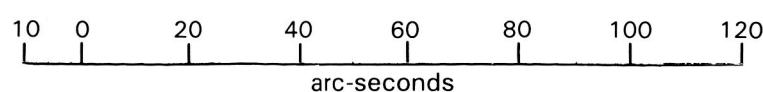


Figure 30b



ATLAS OF COMET HALLEY 1910 II

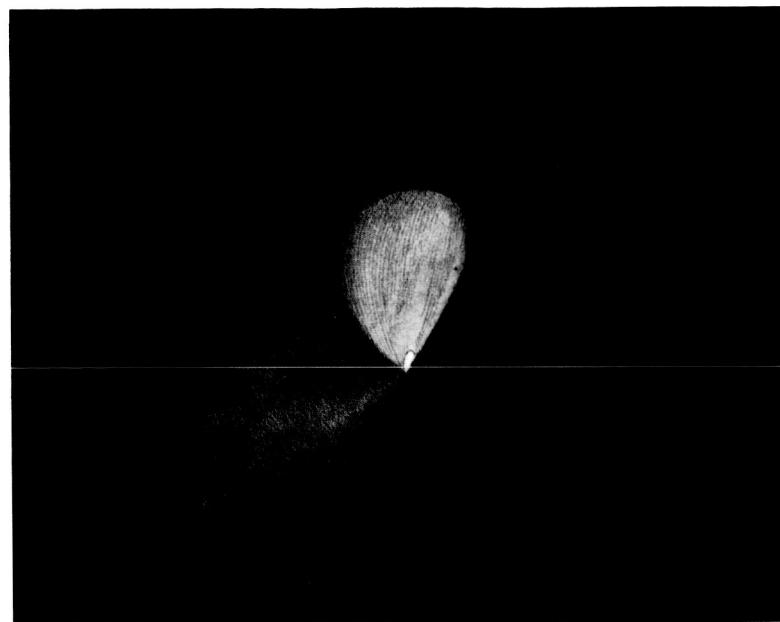


Figure 31a



Figure 32a

Figure	Date	r (A.U.)	Δ (A.U.)	α
31	1835 October 10	0.98	0.22	91°
32	1825 October 12	0.95	0.19	80

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

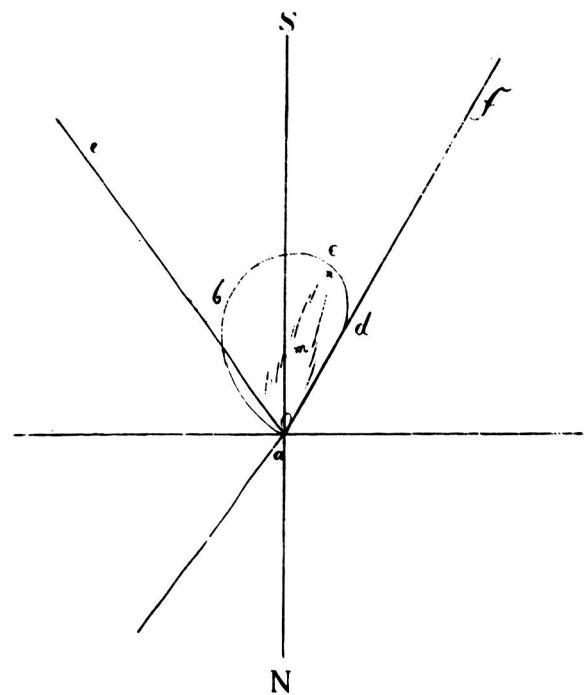


Figure 31b

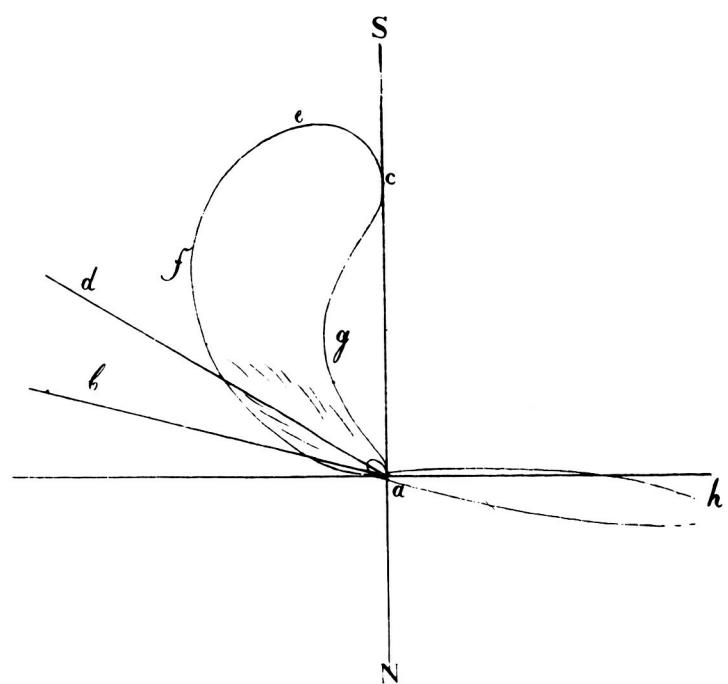
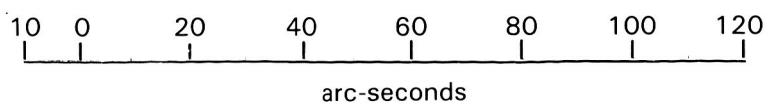


Figure 32b



ATLAS OF COMET HALLEY 1910 II

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Figure 33a

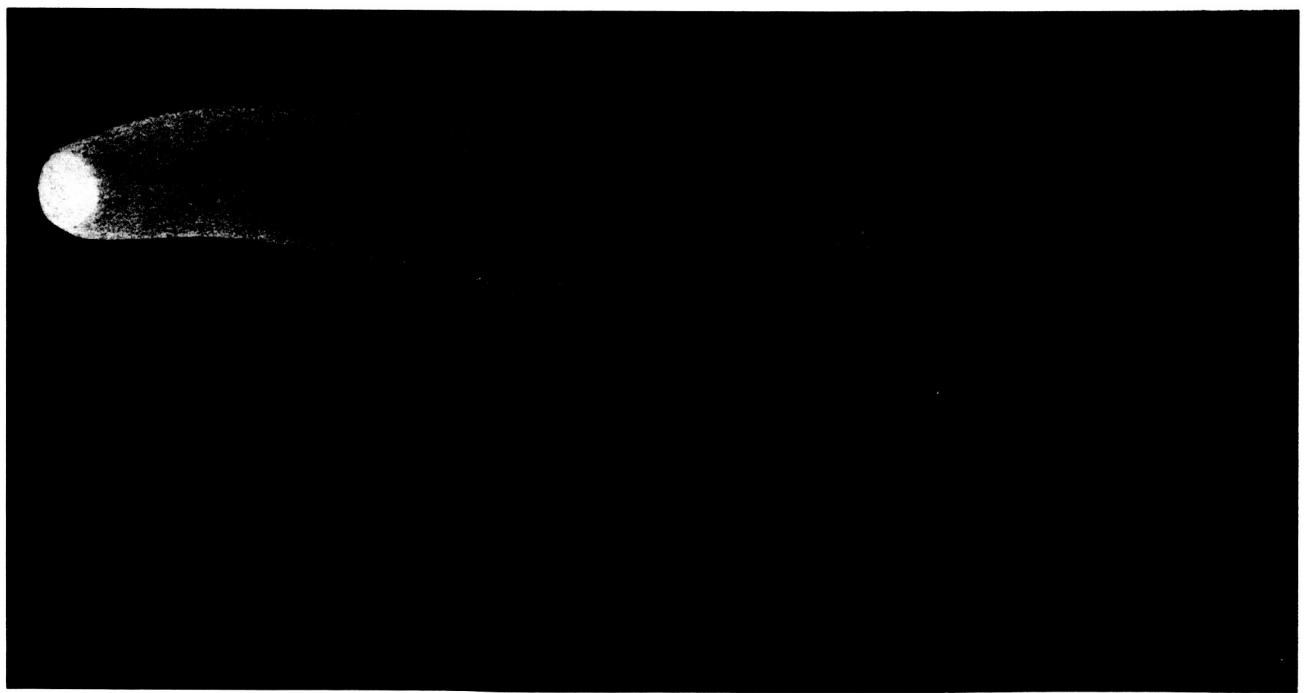


Figure 34a

Figure	Date	r (A.U.)	Δ (A.U.)	α
33	1835 October 14	0.92	0.19	70°
34	1835 October 27	0.73	0.59	83

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

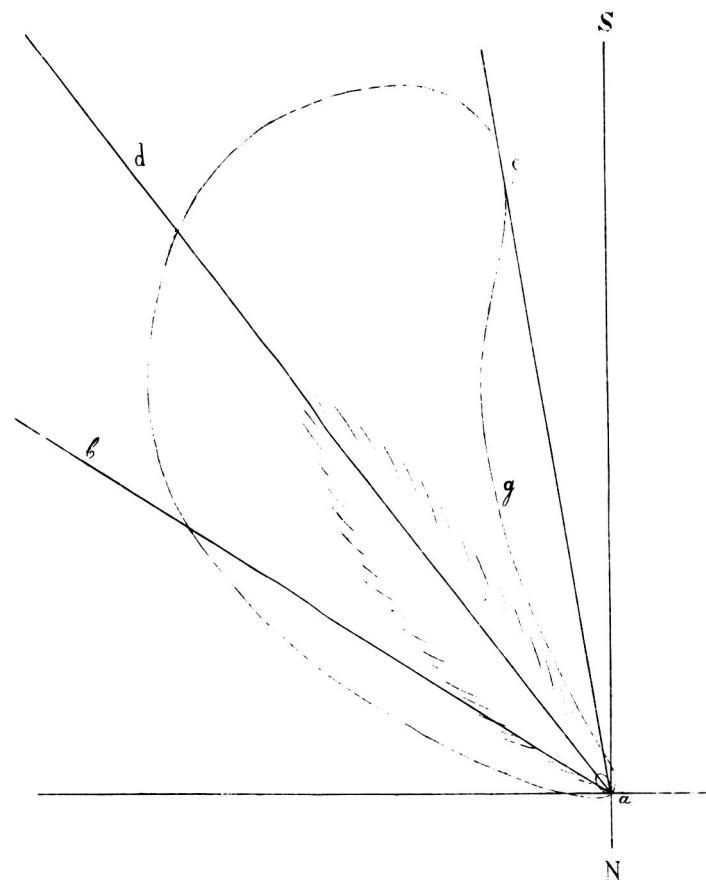


Figure 33b

10 0 20 40 60 80 100 120
arc-minutes

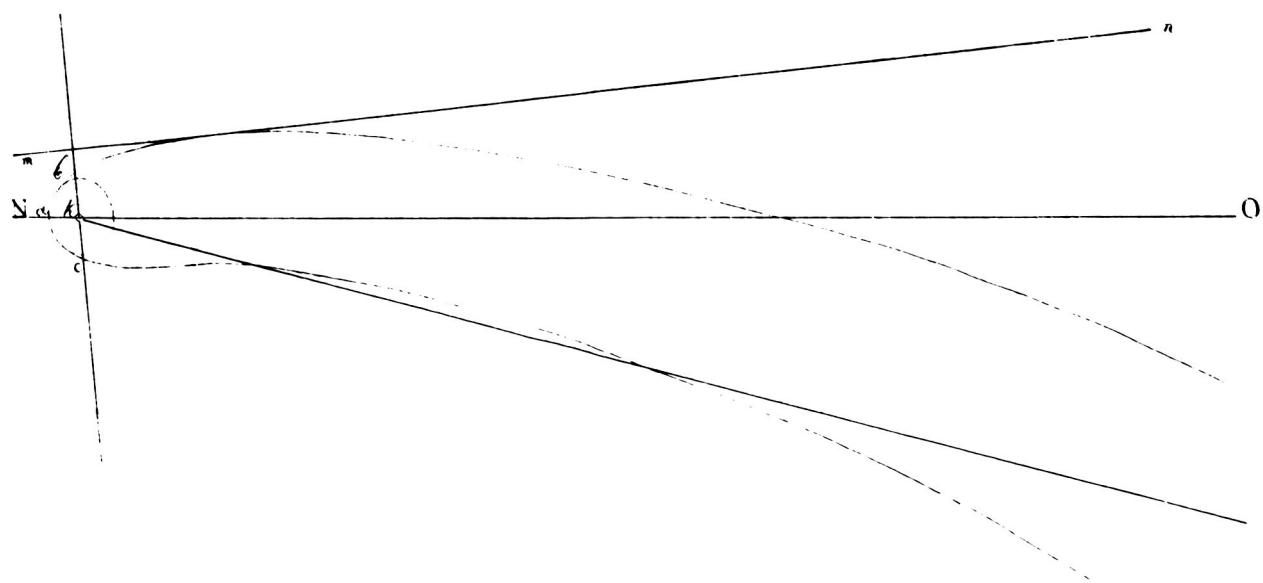


Figure 34b

0 10 20 30 40 50
arc-minutes

ATLAS OF COMET HALLEY 1910 II



Figure 35a

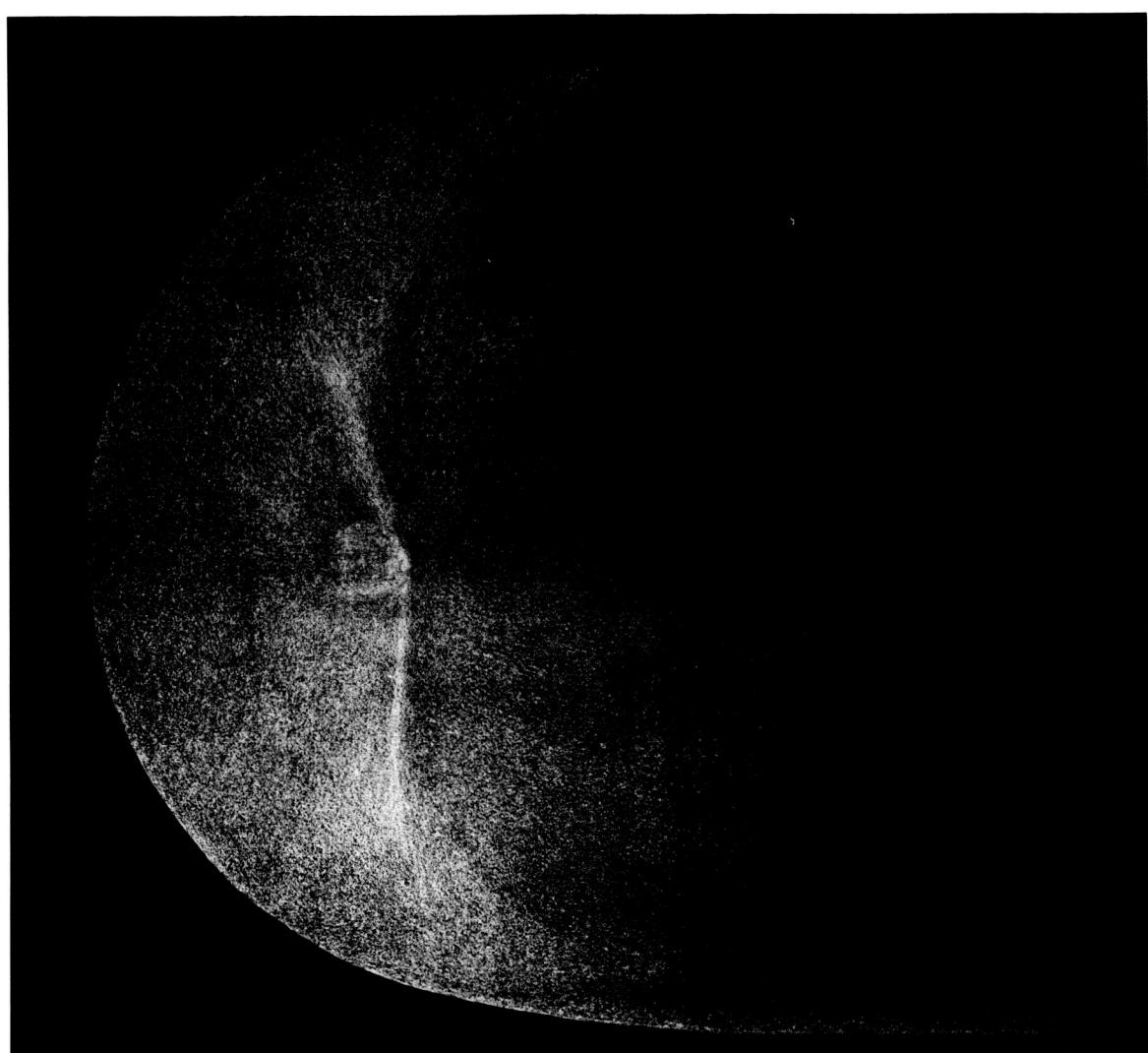


Figure 36a

Figure	Date	r (A.U.)	Δ (A.U.)	α
35	1835 October 29	0.71	0.66	88°
36	1835 October 29	0.71	0.66	88

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

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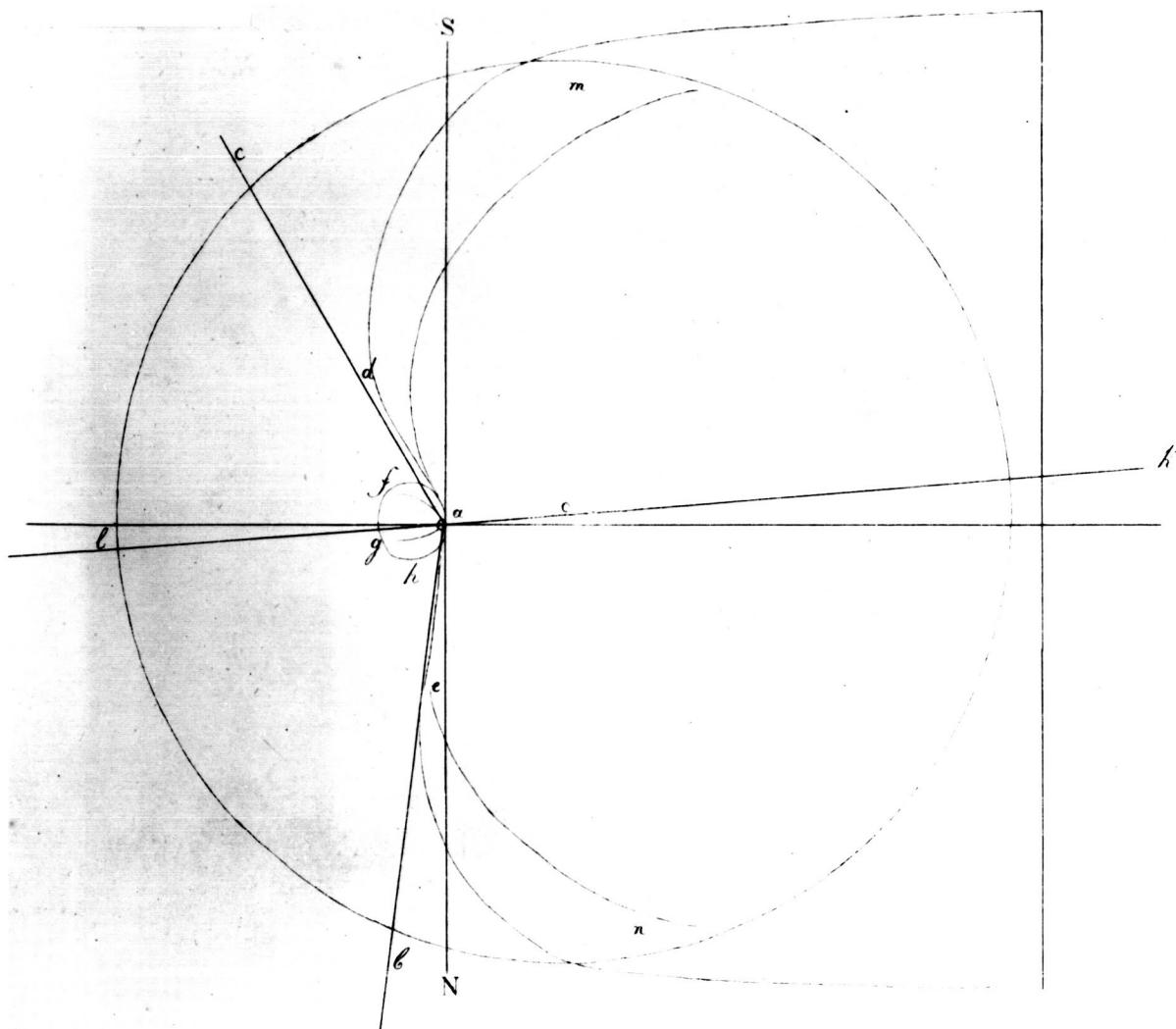
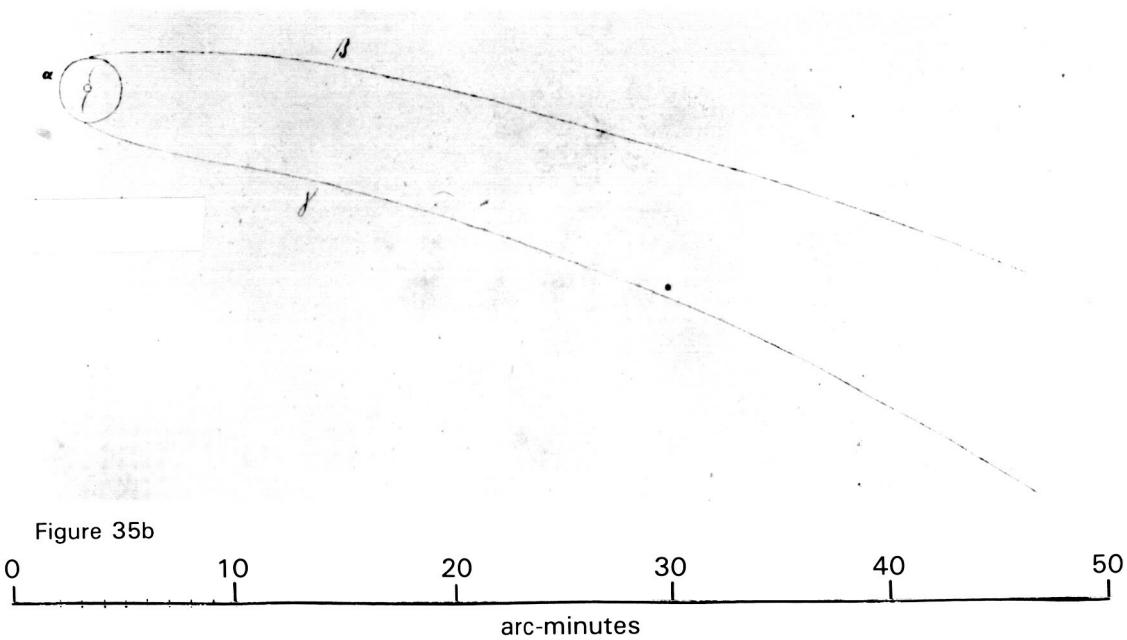


Figure 36b

ATLAS OF COMET HALLEY 1910 II

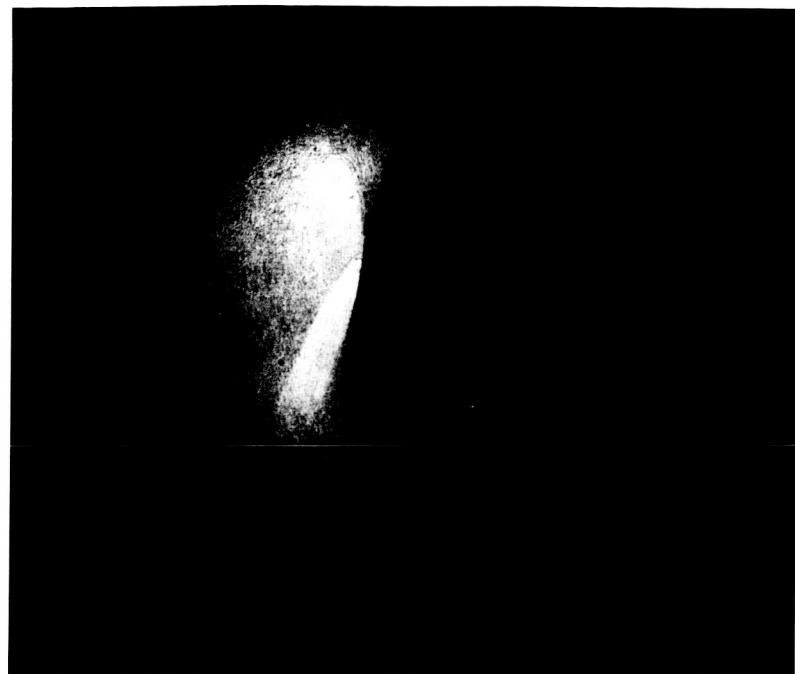


Figure 37a

Figure	Date	r (A.U.)	Δ (A.U.)	α
37	1835 November 5	0.63	0.92	104°

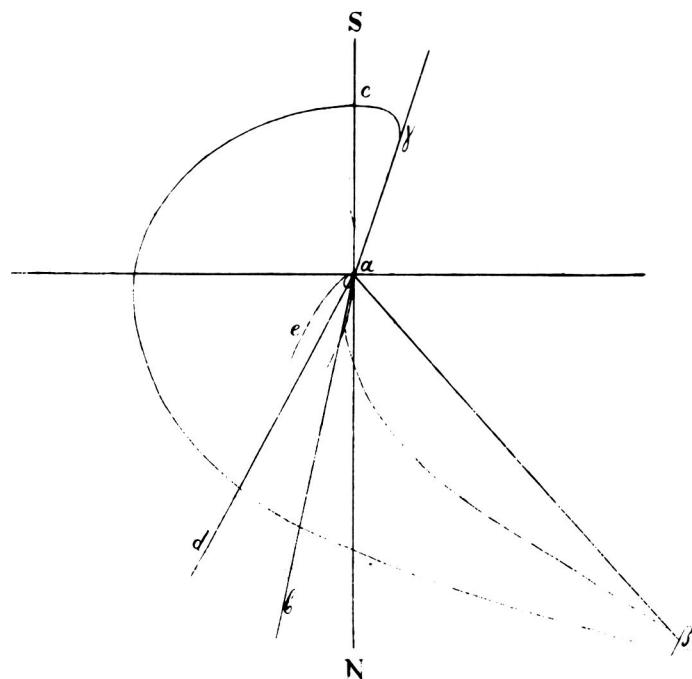
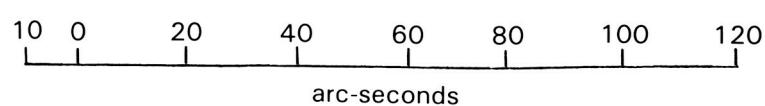


Figure 37b



VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

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Figures 38 through 50 are visual observations of Comet Halley 1835 III by J. F. W. Herschel, Results of Astronomical Observations Made During the Years 1834 to 1838 at the Cape of Good Hope," London, pp. 393-413, 1847. The observations were made with a 7-foot achromat (Figure 38), a night-glass (Figure 39), and a 20-foot reflector (Figures 39 through 50).



Figure 38

Figure 39



Figure 40



Figure 41

Figure 42

ATLAS OF COME HALLEY 1910 II

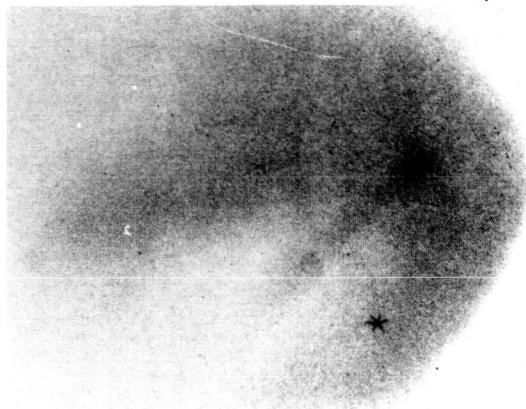


Figure 43

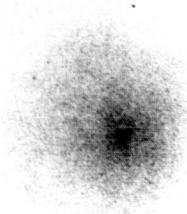


Figure 44

Figure	Date	r (A.U.)	Δ (A.U.)	α
38	1835 October 28	0.72	0.63	85°
39	1835 October 28	0.72	0.63	85
40	1835 October 29	0.71	0.66	88
41	1835 October 29	0.71	0.66	88
42	1835 November 1	0.68	0.78	94
43*	1836 February 19	1.84	1.34	148
44	1836 May 3	2.80	2.21	161

*The scale of Figure 43 has been reduced relative to the other figures.

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

Figure 45



Figure 47

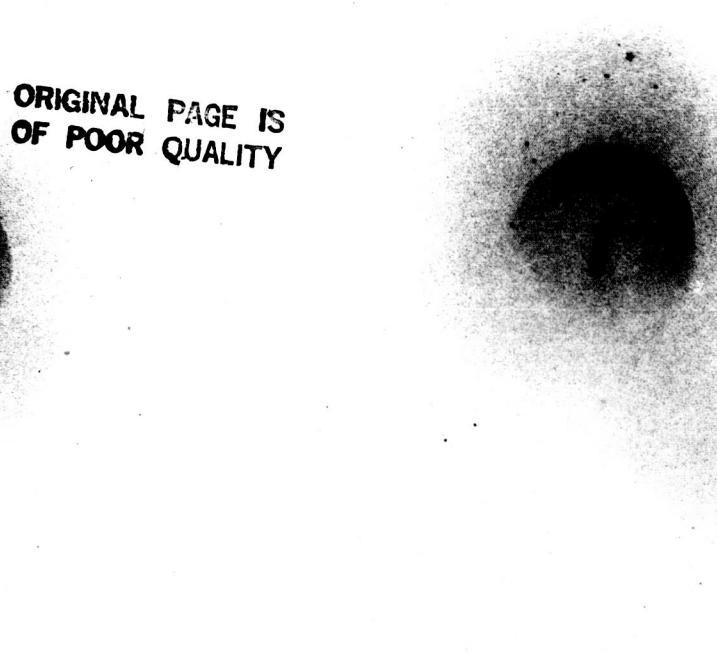


Figure 46



Figure 48

Figure	Date	r (A.U.)	Δ (A.U.)	α
45*	1836 January 25	1.47	1.61	143°
46*	1836 January 26	1.49	1.60	143
47*	1836 January 27	1.50	1.58	143
48	1836 January 28	1.52	1.57	143

*Figures 45, 46, and 47 have the same scale.

ATLAS OF COMET HALLEY 1910 II



Figure 49

Figure 50

Figure	Date	r (A.U.)	Δ (A.U.)	α
49	1836 January 31	1.55	1.54	143°
50	1836 February 11	1.72	1.42	145

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

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Figures 51 through 65 are visual observations of Comet Halley 1835 III by T. Maclear, "Observations of Halley's Comet, made at the Royal Observatory, Cape of Good Hope, in the years 1835 and 1836," (Memoirs Royal Astronomical Society, Volume X, pp. 91-155, 1838).

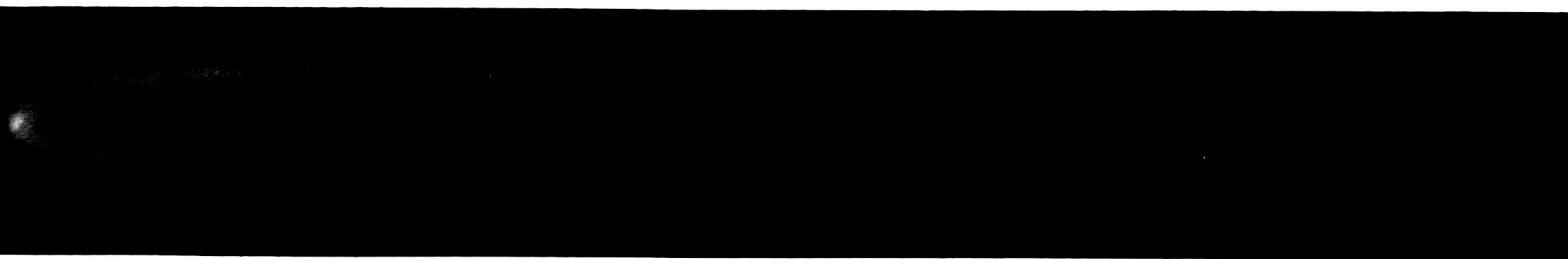


Figure 51

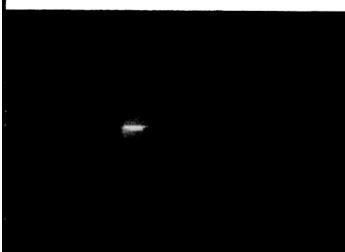


Figure 52

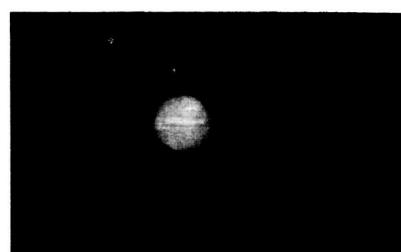


Figure 53

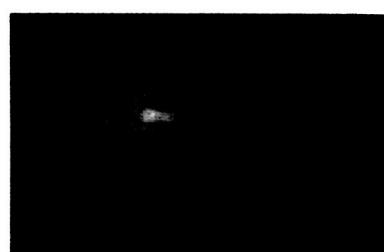


Figure 54



Figure 55



Figure 56

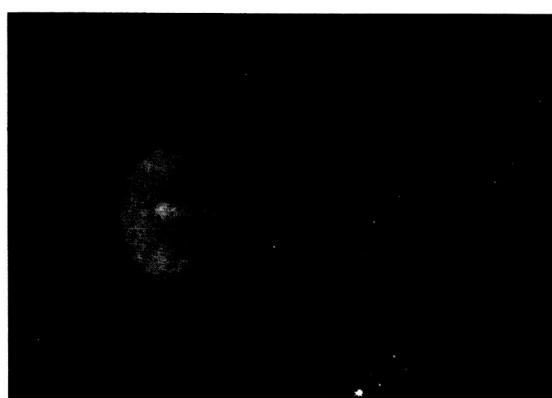


Figure 57

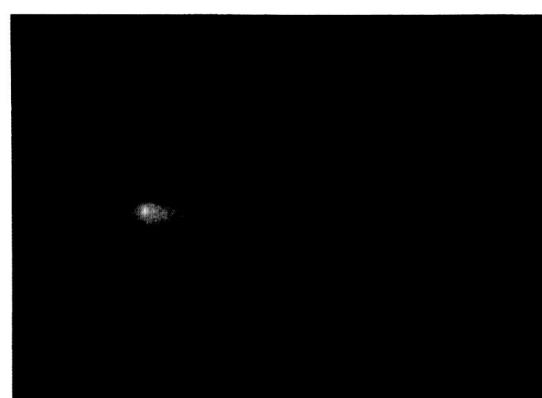


Figure 58

Figure	Date	r (A.U.)	Δ (A.U.)	α
51	1835 November 11	0.60	1.13	119°
52	1836 January 24	1.45	1.61	143
53	1836 January 25	1.47	1.61	143
54	1836 January 26	1.49	1.60	143
55	1836 January 27	1.50	1.58	143
56	1836 January 28	1.52	1.57	143
57	1836 January 30	1.55	1.55	143
58	1836 February 1	1.57	1.53	143

ATLAS OF COMET HALLEY 1910 II



Figure 59



Figure 60

Figure	Date	r (A.U.)	Δ (A.U.)	α
59	1836 February 5	1.63	1.48	144°
60	1836 February 10	1.71	1.43	145

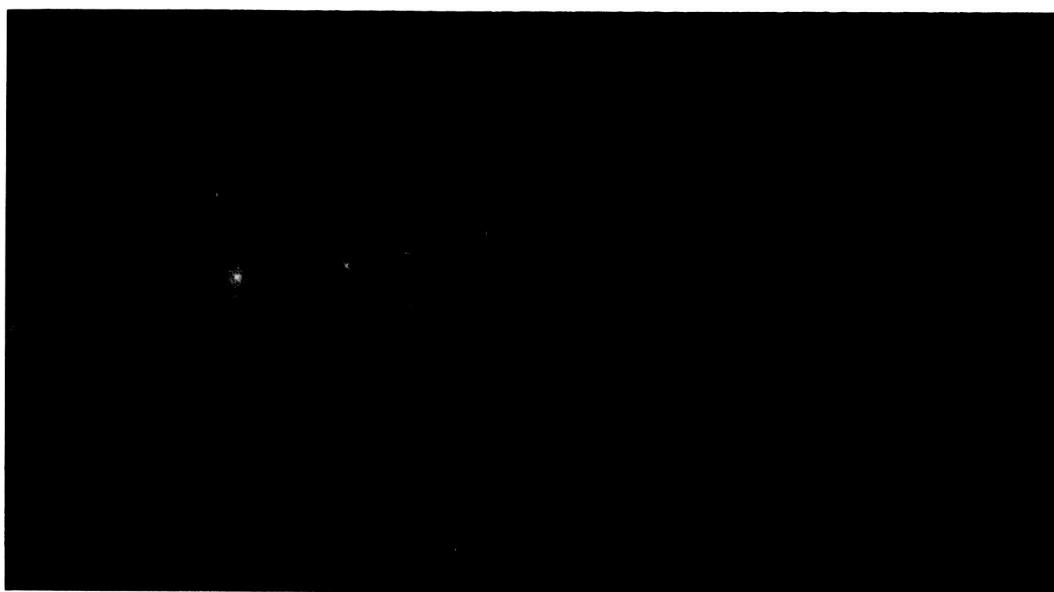


Figure 61



Figure 62

Figure	Date	r (A.U.)	Δ (A.U.)	α
61	1836 February 7	1.66	1.46	144°
62	1836 February 12	1.74	1.41	145

ATLAS OF COMET HALLEY 1910 II



Figure 63

Figure	Date	r (A.U.)	Δ (A.U.)	α
63	1836 February 14	1.77	1.39	147°

VISUAL OBSERVATIONS OF COMET HALLEY 1835 III

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Figure 64

Figure	Date	r (A.U.)	Δ (A.U.)	α
64	1836 February 16	1.79	1.37	147°

ATLAS OF COMET HALLEY 1910 II

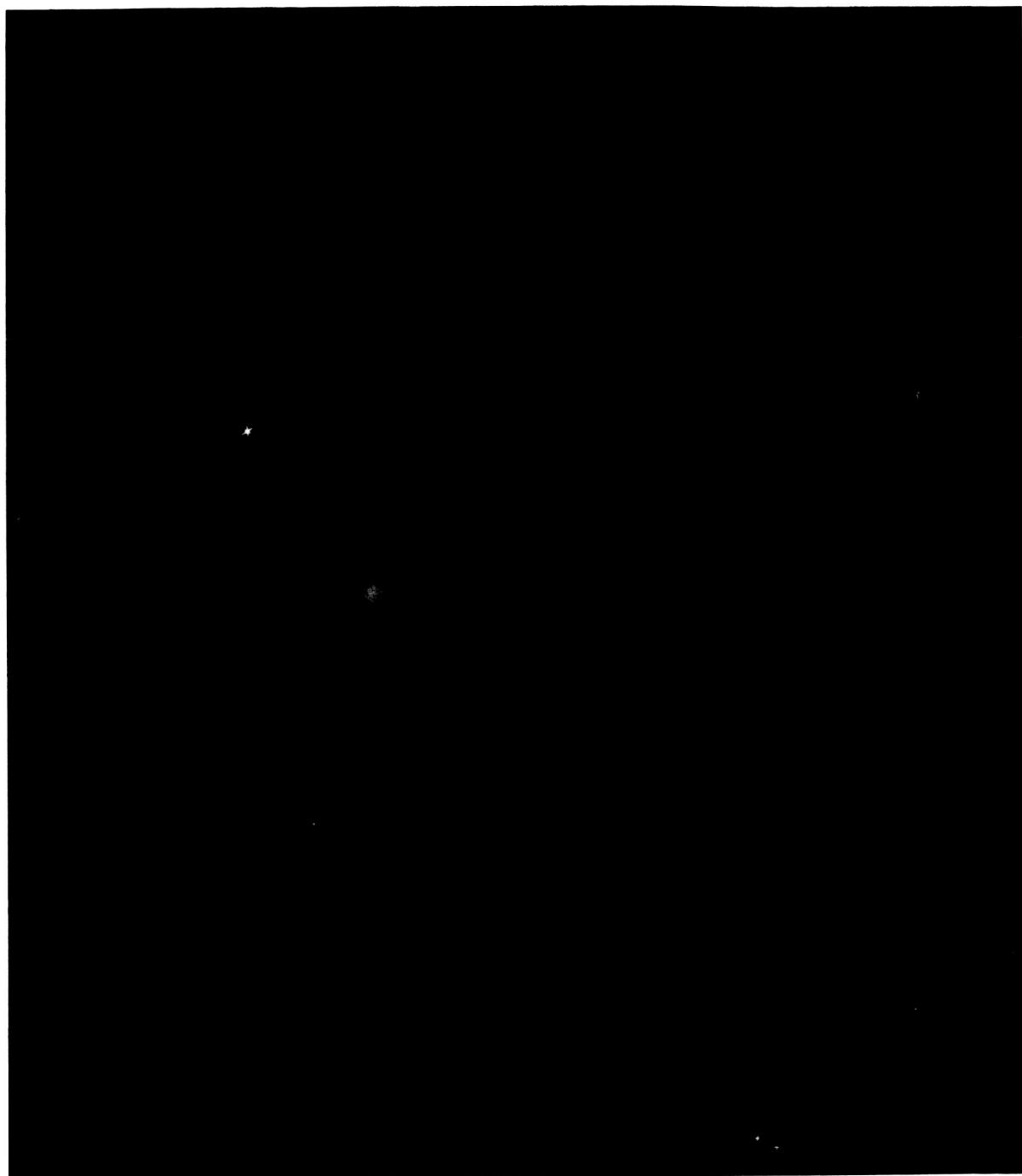


Figure 65

Figure	Date	r (A.U.)	Δ (A.U.)	α
65	1836 February 23	1.89	1.30	151°

2

VISUAL OBSERVATIONS OF COMET HALLEY 1910 II

COMET HALLEY 1910 II

Visual observations of Comet Halley 1910 II by R. T. A. Innes and W. M. Worssell (Transvaal Observatory Circular No. 4, pp. 23-30, 1910, Johannesburg).

Drawings marked I (R. T. A. Innes) were made at the 9-inch refractor. Drawings marked W (W. M. Worssell) were made at the 4-inch refractor, but were sometimes supplemented by views made at the 9-inch refractor. Figure 16, marked M, was made by R. J. Mitchell at the 9-inch refractor.

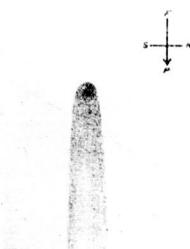


Figure 1. April 16 (I)



Figure 2. April 18 (I)



Figure 3. April 19 (I)

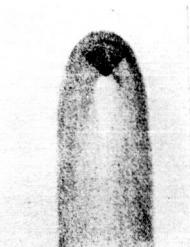


Figure 4. April 21 (I)



Figure 5. April 22 (I)



Figure 6. April 23 (I)

Figure	Date	r (A.U.)	Δ (A.U.)	α
1	1910 April 16	0.59	1.34	44°1
3	1910 April 19	0.59	1.25	52.5
6	1910 April 23	0.59	1.11	64.2

ATLAS OF COMET HALLEY 1910 II



Figure 7. April 24 (I)

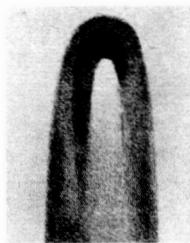


Figure 8. April 25 (I)

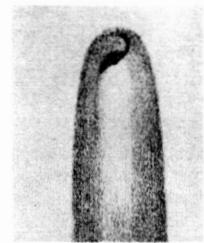


Figure 9. April 27 (I)

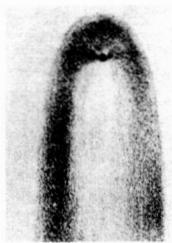


Figure 10. April 28 (I)



Figure 11. April 29 (I)



Figure 12. April 30 (I)



Figure 13. May 1 (I)



Figure 14. May 2 (I)



Figure 15. May 3 (W)



Figure 16. May 3 (M)



Figure 17. May 4 (I)



Figure 18. May 4 (W)



Figure 19. May 5 (I)



Figure 20. May 5 (W)



Figure 21. May 6 (I)



Figure 22. May 6 (W)

Figure	Date	r (A.U.)	Δ (A.U.)	α
7	1910 April 24	0.59	1.08	67°1
12	1910 April 30	0.63	0.85	84.6
21	1910 May 6	0.68	0.62	102.1
25	1910 May 9	0.72	0.50	111.5

VISUAL OBSERVATIONS OF COMET HALLEY 1910 II

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Figure 23. May 8 (I)



Figure 24. May 8 (W)



Figure 25. May 9 (I)



Figure 26. May 9 (W)



Figure 27. May 10 (I)



Figure 28. May 10 (I)



Figure 29. May 11 (I)



Figure 30. May 11 (W)



Figure 31. May 12 (I)



Figure 32. May 12 (W)



Figure 33. May 13 (I)



Figure 34. May 13 (W)



Figure 35. May 14 (I)



Figure 36. May 14 (W)



Figure 37. May 15 (I)



Figure 38. May 15 (W)

Figure	Date	r (A.U.)	Δ (A.U.)	α
27	1910 May 10	0.73	0.46	114°9
31	1910 May 12	0.75	0.38	122.5
35	1910 May 14	0.78	0.31	131.9
36	1910 May 14	0.78	0.31	131.9

ATLAS OF COMET HALLEY 1910 II

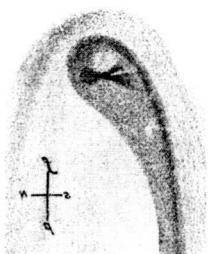


Figure 39. May 16 (I)

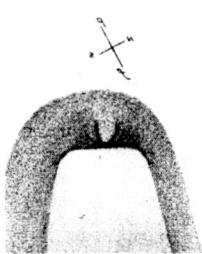


Figure 40. May 20 (I)



Figure 41. May 20 (W)

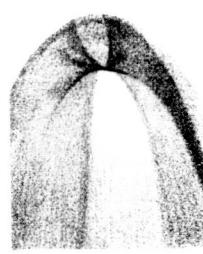


Figure 42. May 21 (I)



Figure 43. May 21 (W)



Figure 44. May 22 (I)



Figure 45. May 22 (W)



Figure 46. May 23 (I)



Figure 47. May 23 (W)



Figure 48. May 24 (I)



Figure 49. May 27 (I)



Figure 50a. May 31 (I)



Figure 50c. June 1 (I)



Figure 50b. May 31 (W)



Figure 50d. June 1 (W)

Figure	Date	r (A.U.)	Δ (A.U.)	α
40	1910 May 20	0.86	0.15	166. ⁰ 8
48	1910 May 24	0.91	0.18	121.1
50d	1910 June 1	1.04	0.49	73.0

VISUAL OBSERVATIONS OF COMET HALLEY 1910 II

Visual observations of Comet Halley 1910 II by A. Ricco, "Osservazioni Astrofisiche Della Cometa Halley," (Memorie della Società degli Spettroscopisti Italiani, Vol. I, Serie 2^a, 1912).

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Figure 51

Figure 52

Figure 53

Figure 54

Figure 55

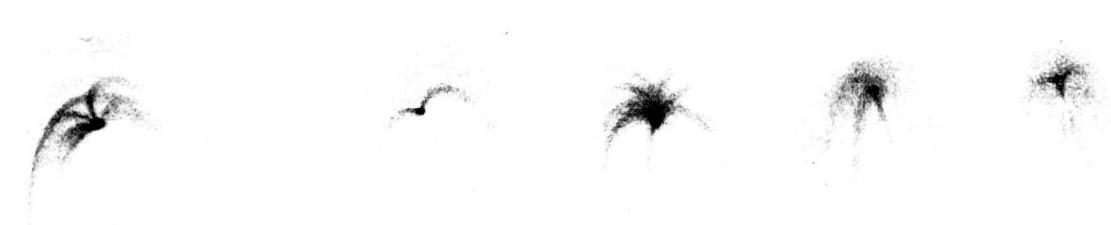


Figure 56

Figure 57

Figure 58

Figure 59

Figure 60

Figure	Date	r (A.U.)	Δ (A.U.)	α
51	1910 May 7.625	0.70	0.55	107°
52	1910 May 8.667	0.71	0.51	110
53	1910 May 12.625	0.76	0.36	125
54	1910 May 13.635	0.77	0.32	130
55	1910 May 14.663	0.79	0.28	136
56	1910 May 21.356	0.88	0.15	145
57	1910 May 24.368	0.93	0.22	107
58	1910 May 25.369	0.94	0.25	99
59	1910 May 26.385	0.96	0.28	93
60	1910 May 31.394	1.03	0.46	75

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COMET HALLEY 1910 II

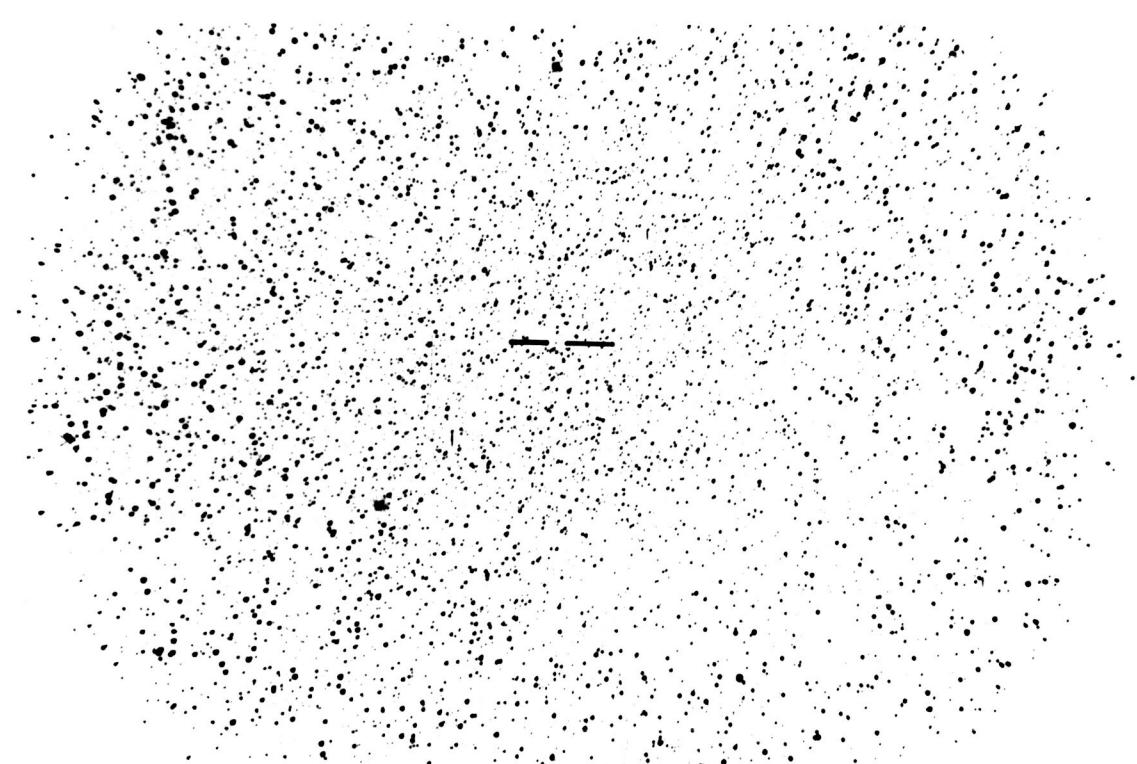


Figure 1. 1909 September 11.565; exposure 60 minutes; $r = 3.42$, $\Delta = 3.55$, $\theta = 74^\circ$, $\alpha = 16^\circ$, S = 9.5 E4

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ATLAS OF COMET HALLEY 1910 II

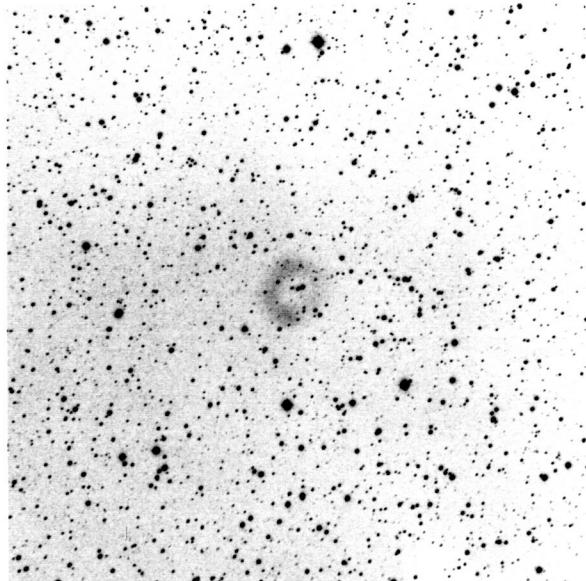


Figure 2. 1909 September 13.987; exposure 60 minutes; $r = 3.39$, $\Delta = 3.48$, $\theta = 76^\circ$, $\alpha = 16^\circ$, $S = 4.9$ E4

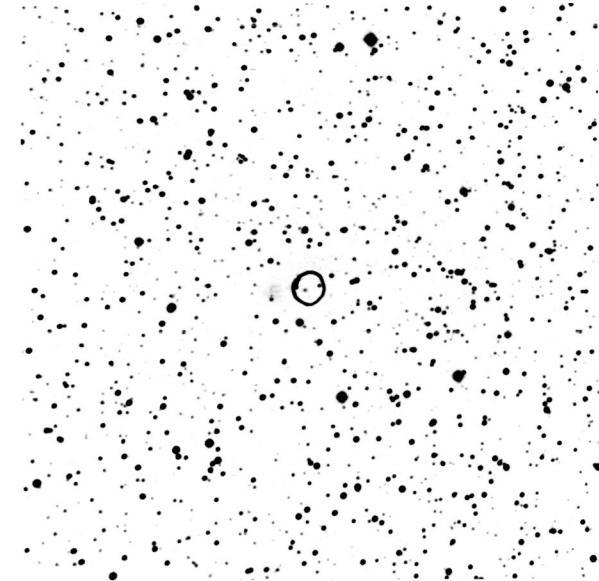


Figure 3. 1909 September 14.979; exposure 76 minutes; $r = 3.38$, $\Delta = 3.45$, $\theta = 77^\circ$, $\alpha = 16^\circ$, $S = 4.9$ E4

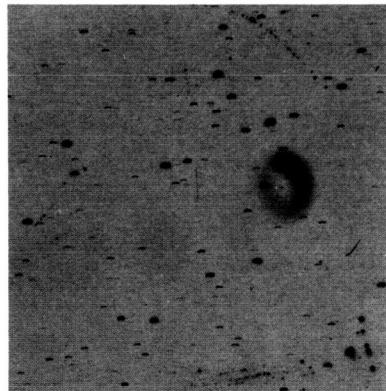


Figure 4. 1909 October 12.910; exposure 36 minutes; $r = 3.05$, $\Delta = 2.62$, $\theta = 106^\circ$, $\alpha = 18^\circ$, $S = 3.7$ E4

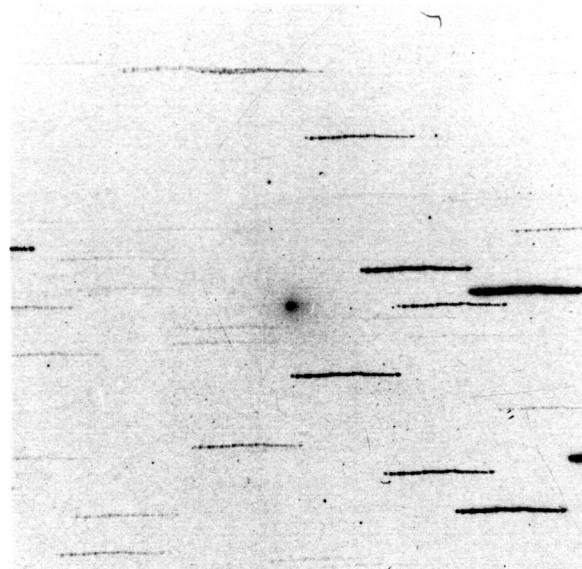


Figure 5. 1909 November 7.823; exposure 142 minutes; $r = 2.74$, $\Delta = 1.91$, $\theta = 139^\circ$, $\alpha = 13^\circ$, $S = 2.1$ E4

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Figure 6. 1909 November 15.848; exposure 130 minutes; $r = 2.64$, $\Delta = 1.72$, $\theta = 152^\circ$, $\alpha = 10^\circ$, $S = 2.4 \text{ E}4$

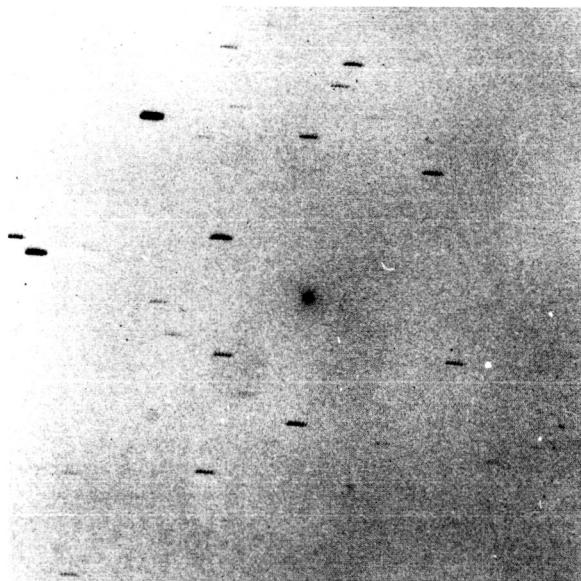


Figure 7. 1909 December 4.824; exposure 17 minutes; $r = 2.40$, $\Delta = 1.42$, $\theta = 169^\circ$, $\alpha = 4^\circ$, $S = 1.9 \text{ E}4$

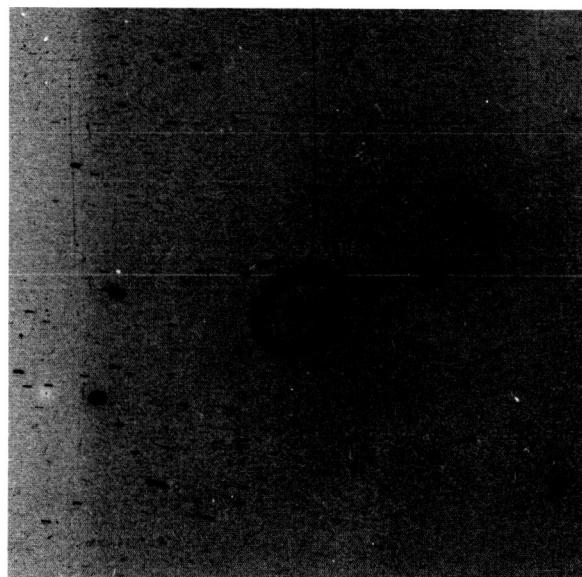


Figure 8. 1909 December 6.678; exposure 10 minutes; $r = 2.37$, $\Delta = 1.40$, $\theta = 166^\circ$, $\alpha = 5^\circ$, $S = 4.2 \text{ E}4$

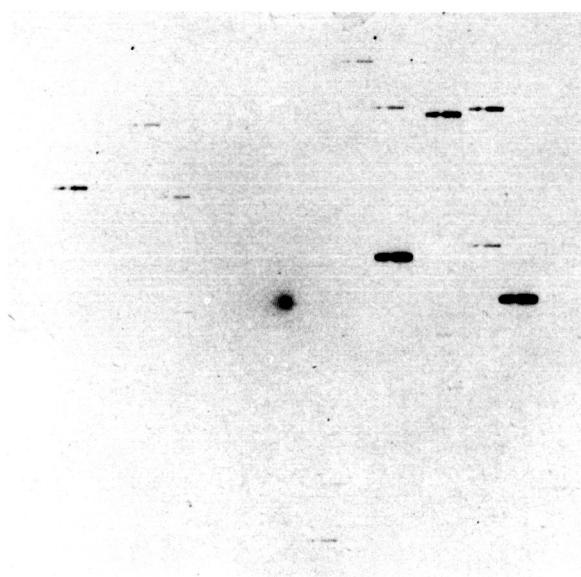


Figure 9. 1909 December 6.872; exposure 36 minutes; $r = 2.37$, $\Delta = 1.40$, $\theta = 166^\circ$, $\alpha = 5^\circ$, $S = 1.9 \text{ E}4$

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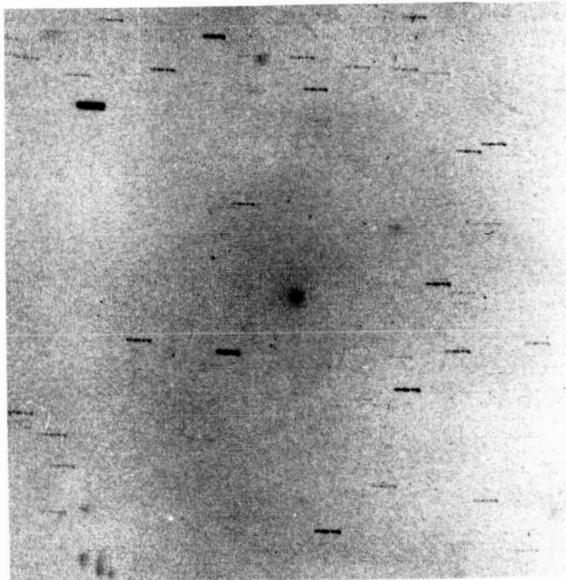


Figure 10. 1909 December 8.815; exposure 17 minutes; $r = 2.34$, $\Delta = 1.39$, $\theta = 162^\circ$, $\alpha = 7^\circ$, $S = 1.9 \text{ E}4$

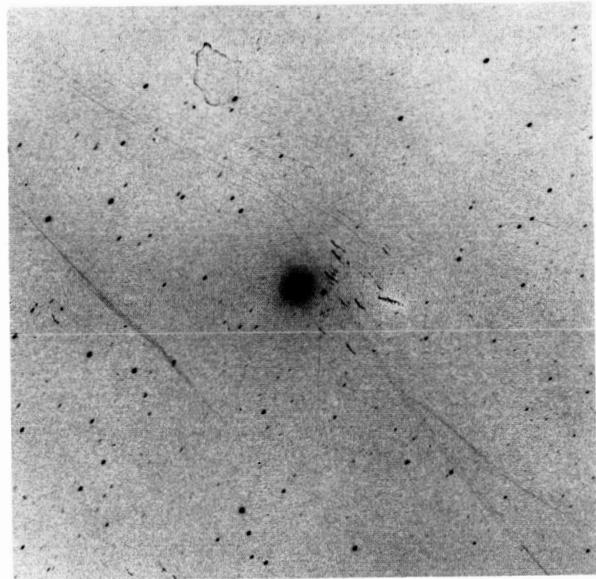


Figure 11. 1909 December 9.635; exposure 10 minutes; $r = 2.33$, $\Delta = 1.38$, $\theta = 160^\circ$, $\alpha = 7^\circ$, $S = 4.1 \text{ E}4$

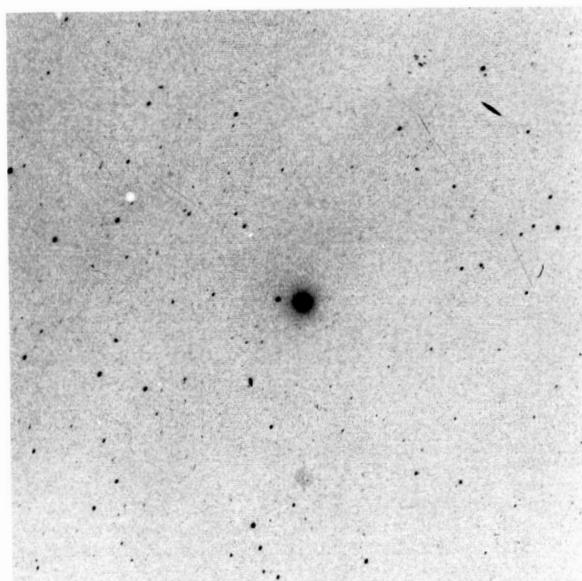


Figure 12. 1909 December 10.676; exposure 60 minutes; $r = 2.32$, $\Delta = 1.37$, $\theta = 158^\circ$, $\alpha = 8^\circ$, $S = 4.1 \text{ E}4$

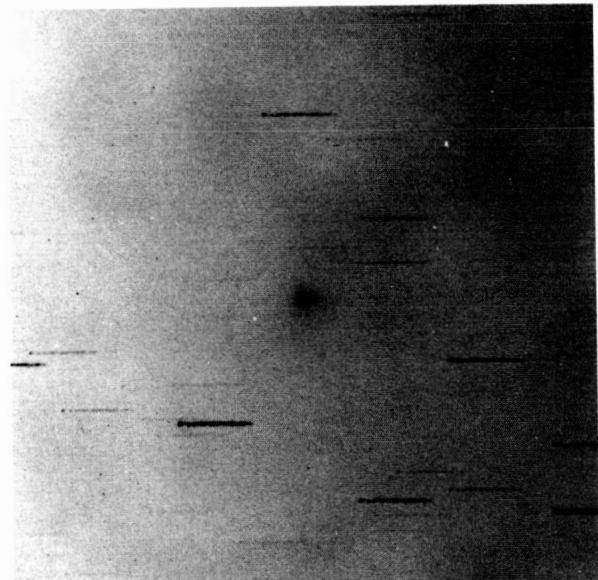


Figure 13. 1909 December 10.786; exposure 63 minutes; $r = 2.32$, $\Delta = 1.37$, $\theta = 158^\circ$, $\alpha = 8^\circ$, $S = 1.8 \text{ E}4$

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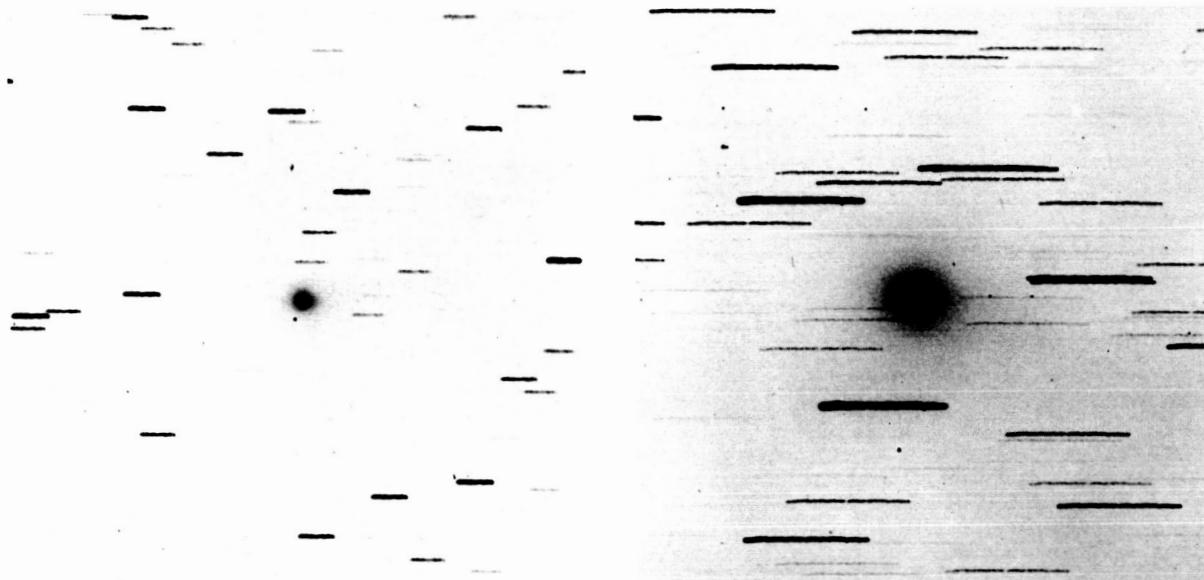


Figure 14. 1909 December 13.796; exposure 35 minutes; $r = 2.28$, $\Delta = 1.36$, $\theta = 152^\circ$, $\alpha = 11^\circ$, S = 1.9 E4

Figure 15. 1909 December 14.789; exposure 120 minutes; $r = 2.27$, $\Delta = 1.36$, $\theta = 150^\circ$, $\alpha = 12^\circ$, S = 1.9 E4

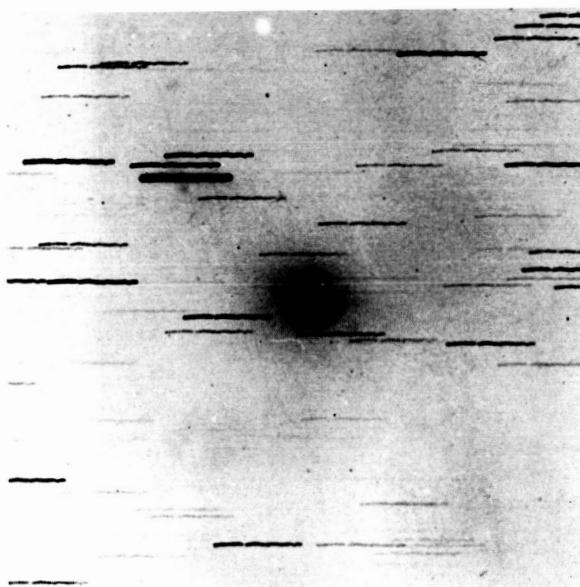


Figure 16. 1909 December 15.741; exposure 90 minutes; $r = 2.25$, $\Delta = 1.35$, $\theta = 148^\circ$, $\alpha = 13^\circ$, S = 1.9 E4

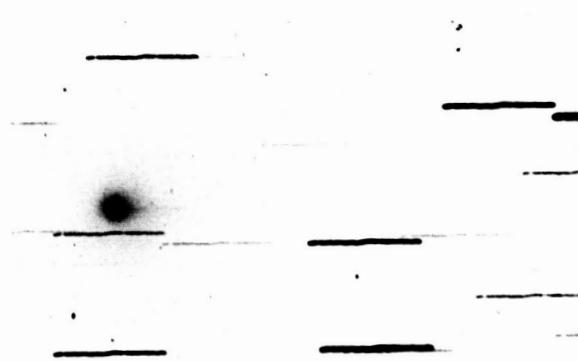


Figure 17. 1909 December 16.742; exposure 110 minutes; $r = 2.24$, $\Delta = 1.35$, $\theta = 146^\circ$, $\alpha = 14^\circ$, S = 1.9 E4

ATLAS OF COMET HALLEY 1910 II

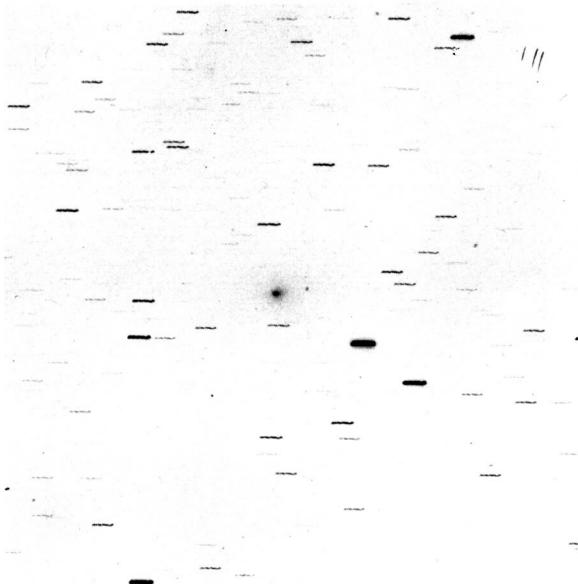


Figure 18. 1909 December 31.479; exposure 60 minutes; $r = 2.04$, $\Delta = 1.40$, $\theta = 116^\circ$, $\alpha = 25^\circ$, $S = 4.9$ E4

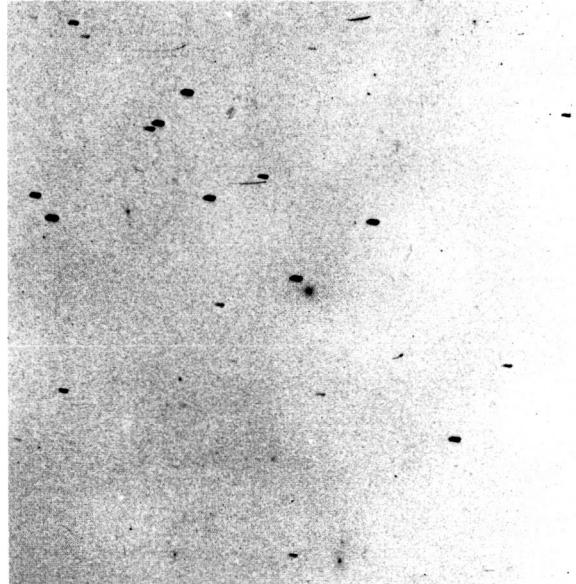


Figure 19. 1910 January 6.754; exposure 10 minutes; $r = 1.95$, $\Delta = 1.45$, $\theta = 105^\circ$, $\alpha = 29^\circ$, $S = 1.9$ E4



Figure 20. 1910 January 6.791; exposure 30 minutes; $r = 1.95$, $\Delta = 1.45$, $\theta = 105^\circ$, $\alpha = 29^\circ$, $S = 1.9$ E4

Figure 21. 1910 January 7.742; exposure 50 minutes; $r = 1.94$, $\Delta = 1.45$, $\theta = 103^\circ$, $\alpha = 29^\circ$, $S = 2.1$ E4

PHOTOGRAPHS OF COMET HALLEY 1910 II

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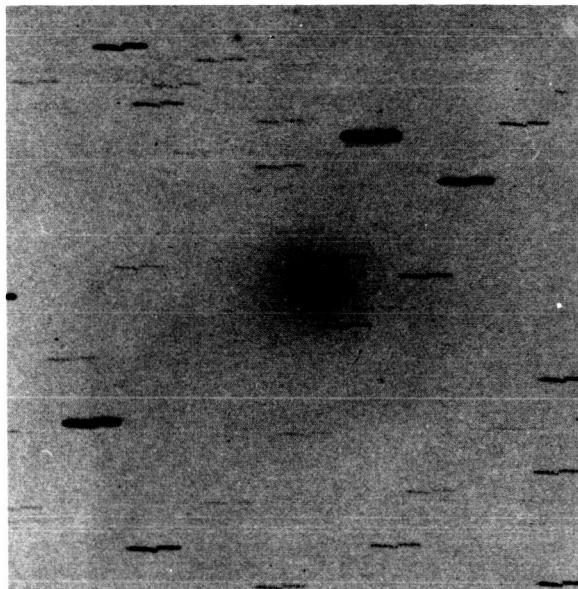


Figure 22. 1910 January 8.594; exposure 60 minutes; $r = 1.93$, $\Delta = 1.46$, $\theta = 102^\circ$, $\alpha = 29^\circ$, $S = 1.8 \text{ E}4$

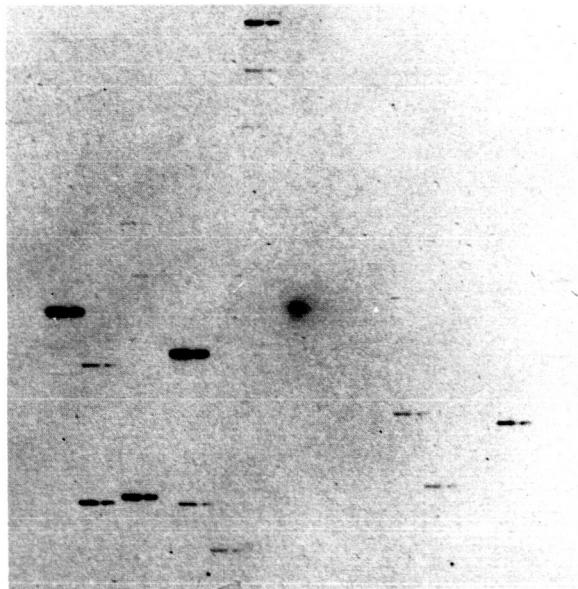


Figure 23. 1910 January 12.727; exposure 50 minutes; $r = 1.87$, $\Delta = 1.50$, $\theta = 95^\circ$, $\alpha = 31^\circ$, $S = 2.0 \text{ E}4$

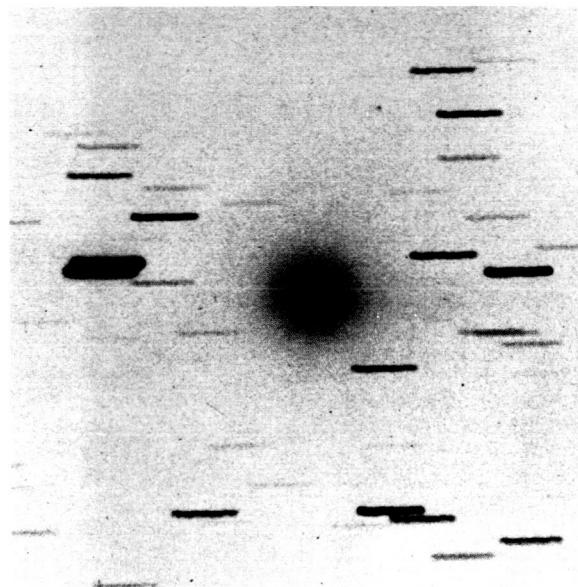


Figure 24. 1910 January 14.627; exposure 95 minutes; $r = 1.84$, $\Delta = 1.52$, $\theta = 91^\circ$, $\alpha = 32^\circ$, $S = 1.9 \text{ E}4$

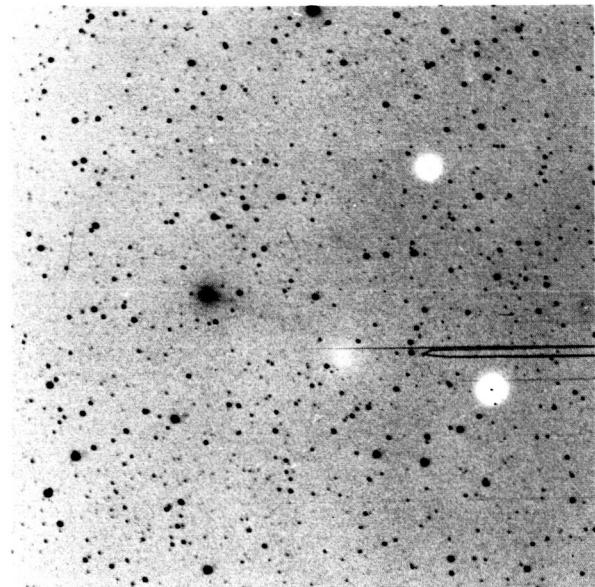


Figure 25. 1910 January 29.691; exposure 70 minutes; $r = 1.62$, $\Delta = 1.68$, $\theta = 69^\circ$, $\alpha = 34^\circ$, $S = 1.6 \text{ E}4$

ATLAS OF COMET HALLEY 1910 II

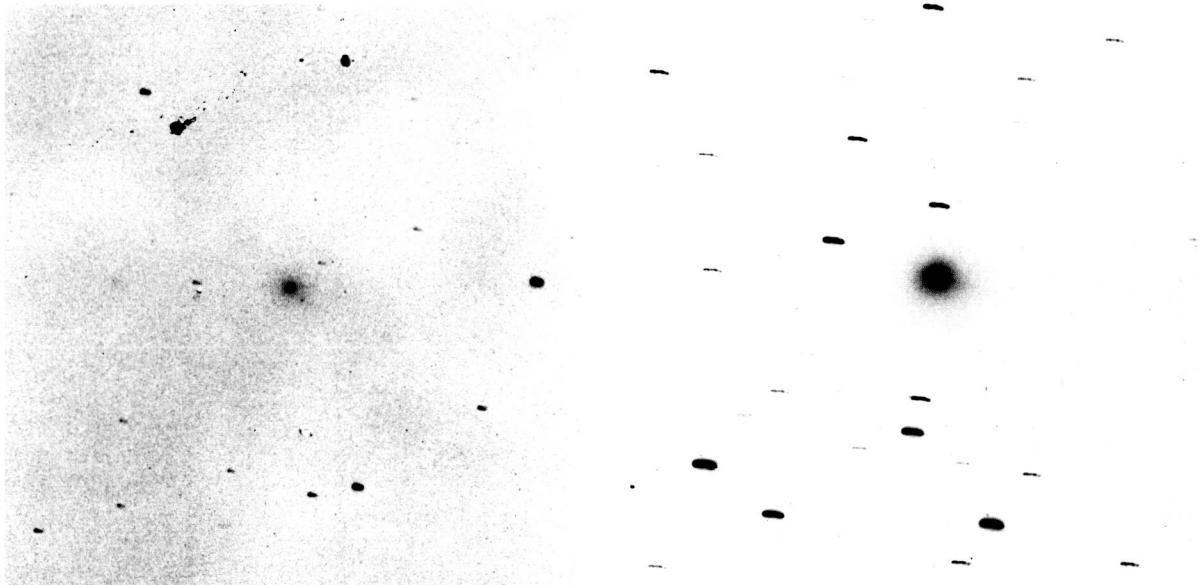


Figure 26. 1910 January 29.700; exposure 18 minutes; $r = 1.62$, $\Delta = 1.68$, $\theta = 69^\circ$, $\alpha = 34^\circ$, $S = 2.3$ E4

Figure 27. 1910 January 30.667; exposure 45 minutes; $r = 1.61$, $\Delta = 1.69$, $\theta = 67^\circ$, $\alpha = 34^\circ$, $S = 2.3$ E4

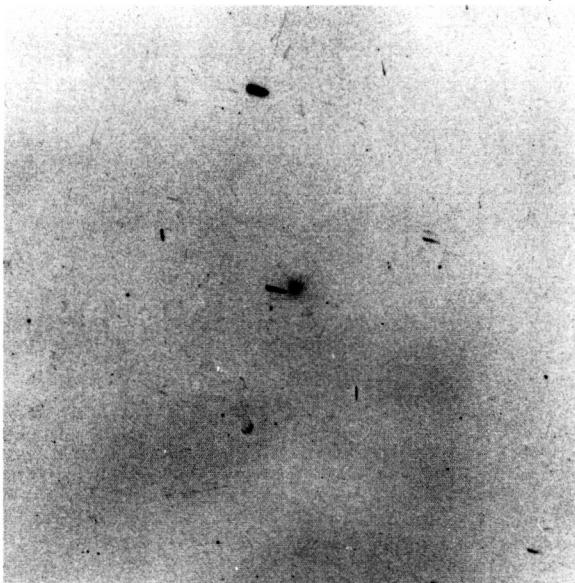


Figure 28. 1910 January 31.712; exposure 40 minutes; $r = 1.59$, $\Delta = 1.70$, $\theta = 66^\circ$, $\alpha = 34^\circ$, $S = 2.3$ E4

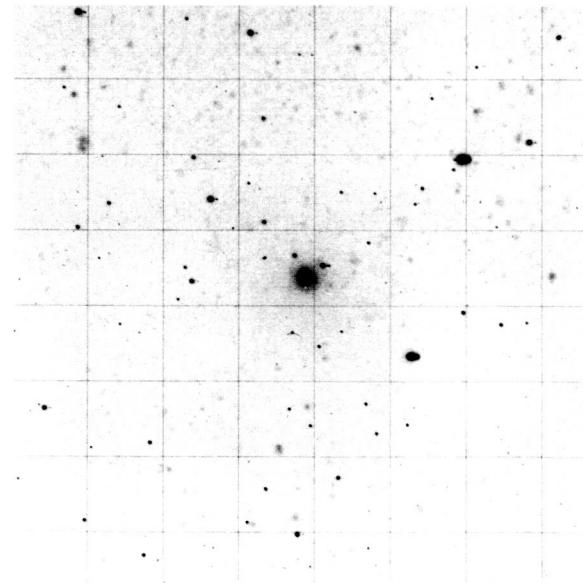
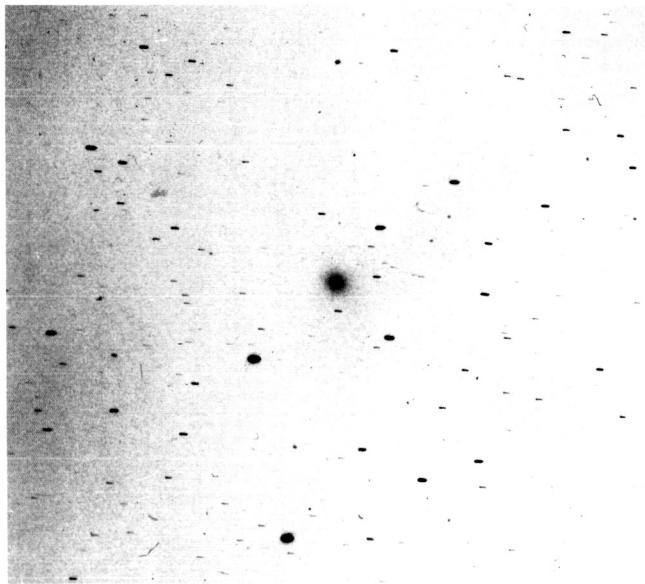


Figure 29. 1910 February 2.223; exposure 24 minutes; $r = 1.57$, $\Delta = 1.72$, $\theta = 64^\circ$, $\alpha = 34^\circ$, $S = 3.8$ E4

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Figure 30. 1910 February 4.510; exposure 52 minutes; $r = 1.53$, $\Delta = 1.74$, $\theta = 61^\circ$, $\alpha = 34^\circ$, $S = 6.1 \text{ E}4$

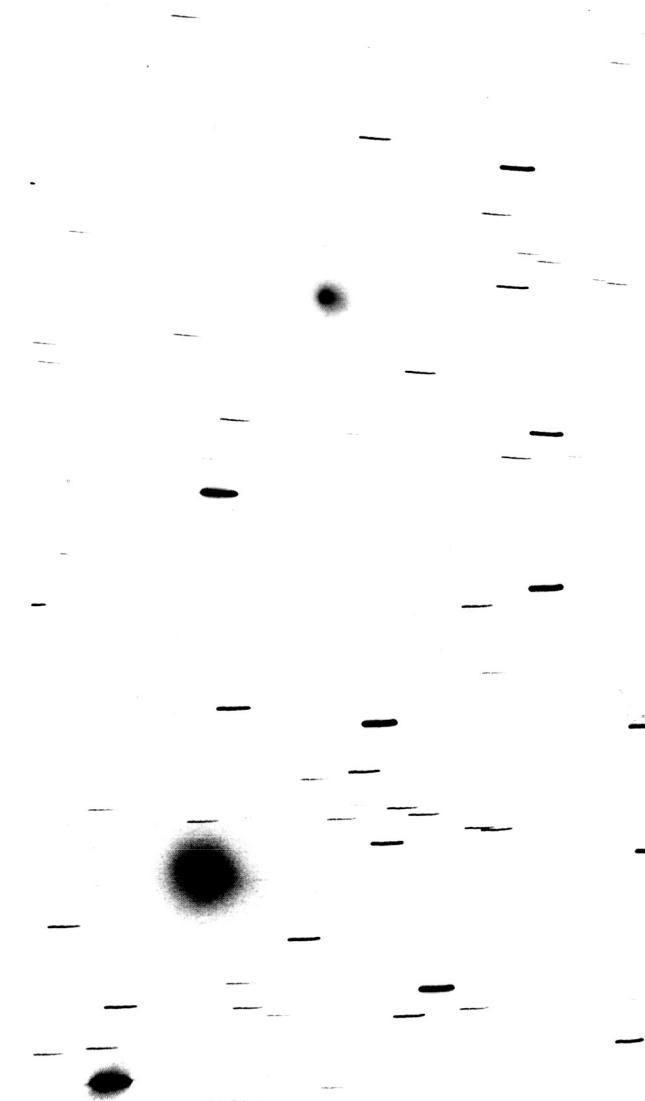


Figure 31-1. 1910 February 4.694; exposure 110 minutes; $r = 1.53$, $\Delta = 1.74$, $\theta = 61^\circ$, $\alpha = 34^\circ$, $S = 2.5 \text{ E}4$



Figure 31-2. 1910 February 4.694; exposure 110 minutes; $r = 1.53$, $\Delta = 1.74$, $\theta = 61^\circ$, $\alpha = 34^\circ$, $S = 2.5 \text{ E}4$

ATLAS OF COMET HALLEY 1910 II

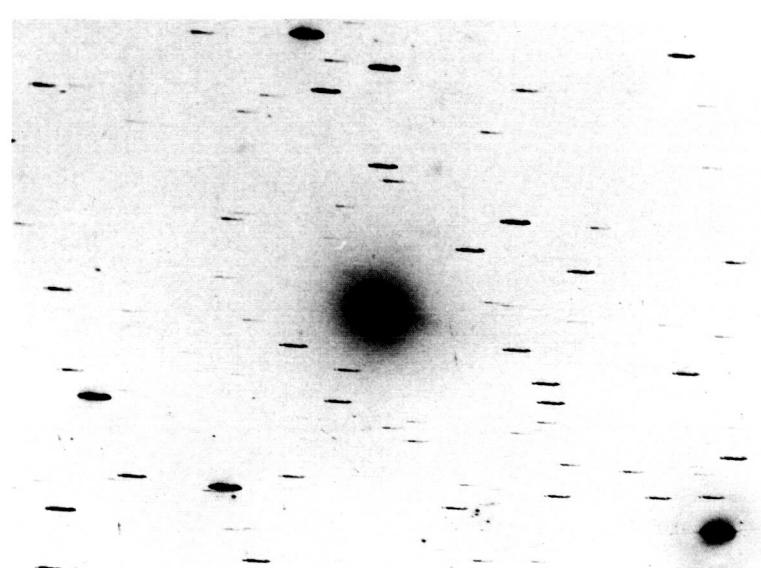


Figure 32. 1910 February 5.222; exposure 30 minutes; $r = 1.52$, $\Delta = 1.75$, $\theta = 60^\circ$, $\alpha = 34^\circ$, $S = 3.8 \text{ E}4$

Figure 34. 1910 February 8.491; exposure 43 minutes;
 $r = 1.47$, $\Delta = 1.78$, $\theta = 56^\circ$, $\alpha = 33^\circ$, $S = 3.2 \text{ E}4$

PHOTOGRAPHS OF COMET HALLEY 1910 II

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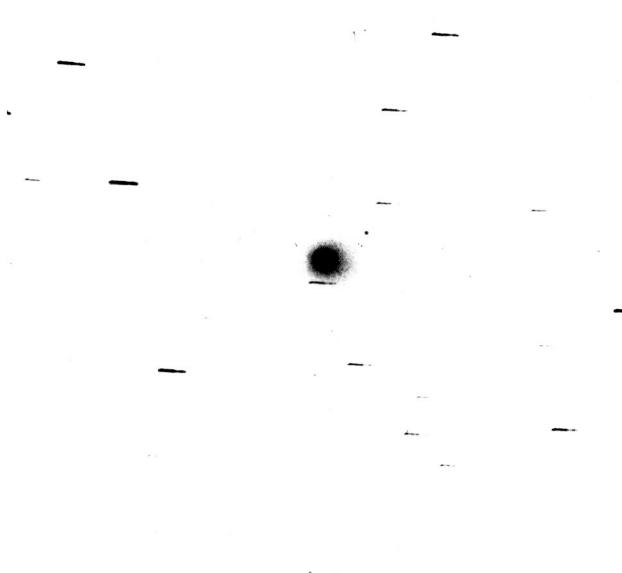


Figure 35. 1910 February 8.638; exposure 90 minutes;
 $r = 1.47$, $\Delta = 1.78$, $\theta = 55^\circ$, $\alpha = 33^\circ$, $S = 2.4$ E4

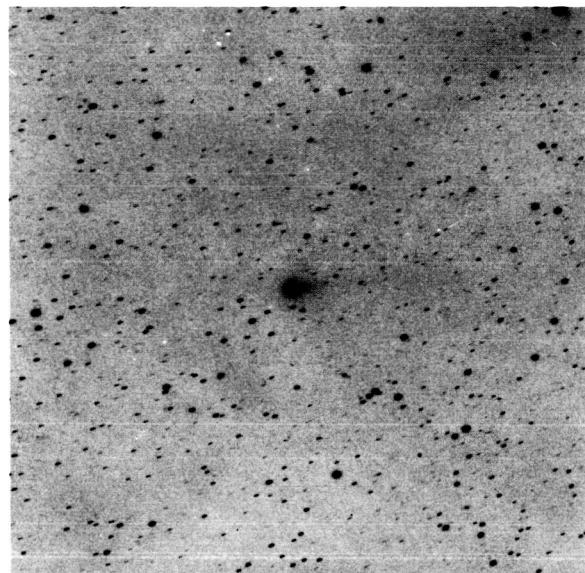


Figure 36. 1910 February 10.569; exposure 110 minutes;
 $r = 1.44$, $\Delta = 1.79$, $\theta = 53^\circ$, $\alpha = 33^\circ$,
 $S = 1.7$ E5

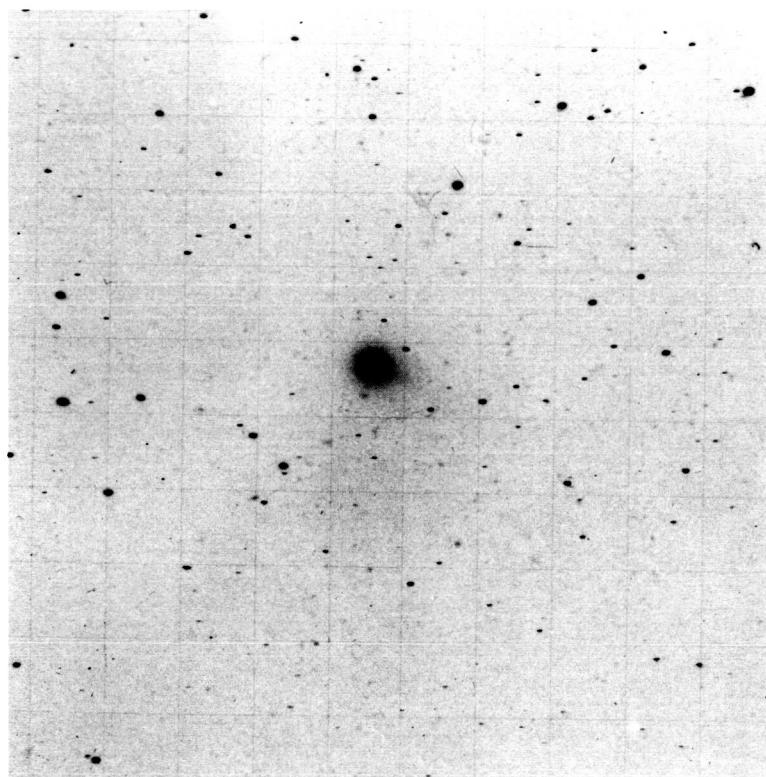


Figure 37. 1910 February 10.222; exposure 30 minutes; $r = 1.45$,
 $\Delta = 1.79$, $\theta = 53^\circ$, $\alpha = 33^\circ$, $S = 3.9$ E4

ATLAS OF COMET HALLEY 1910 II

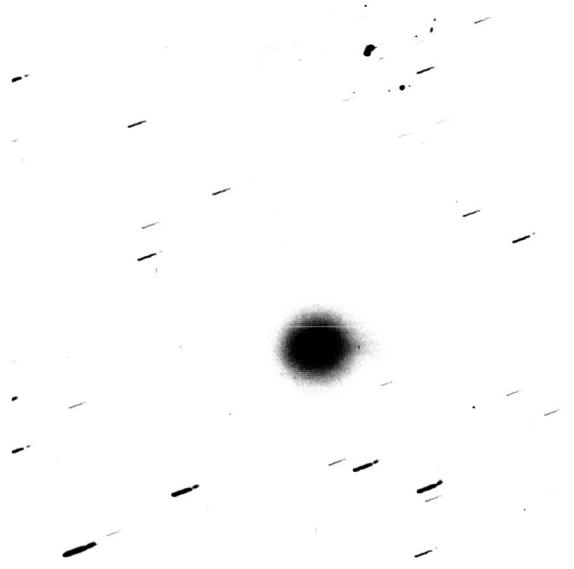


Figure 38-1. 1910 February 10.685; exposure 122 minutes; $r = 1.44$, $\Delta = 1.80$, $\theta = 53^\circ$, $\alpha = 33^\circ$, $S = 2.5 \text{ E}4$

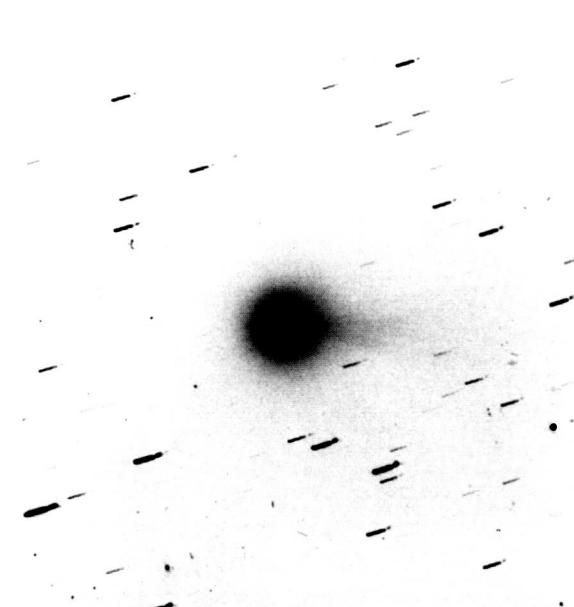


Figure 38-2. 1910 February 10.685; exposure 122 minutes; $r = 1.44$, $\Delta = 1.80$, $\theta = 53^\circ$, $\alpha = 33^\circ$, $S = 2.5 \text{ E}4$

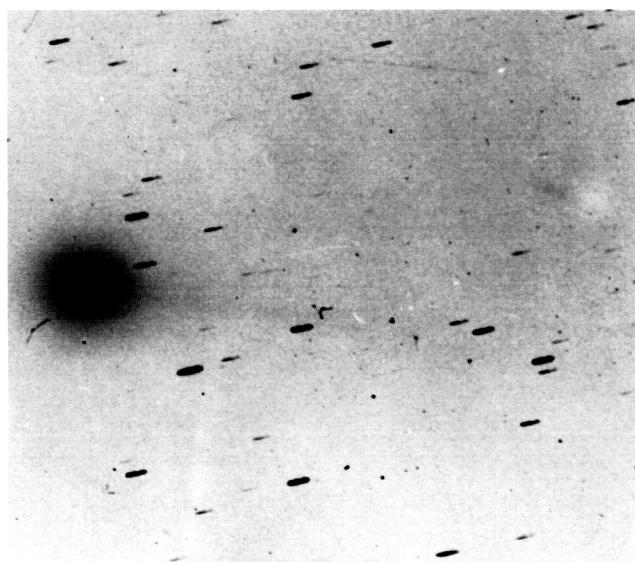


Figure 39. 1910 February 11.665; exposure 76 minutes; $r = 1.43$, $\Delta = 1.80$, $\theta = 52^\circ$, $\alpha = 32^\circ$, $S = 2.6 \text{ E}4$

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Figure 40. 1910 February 27.222; exposure 12 minutes; $r = 1.19$,
 $\Delta = 1.89$, $\theta = 33^\circ$, $\alpha = 27^\circ$, $S = 4.1 E4$

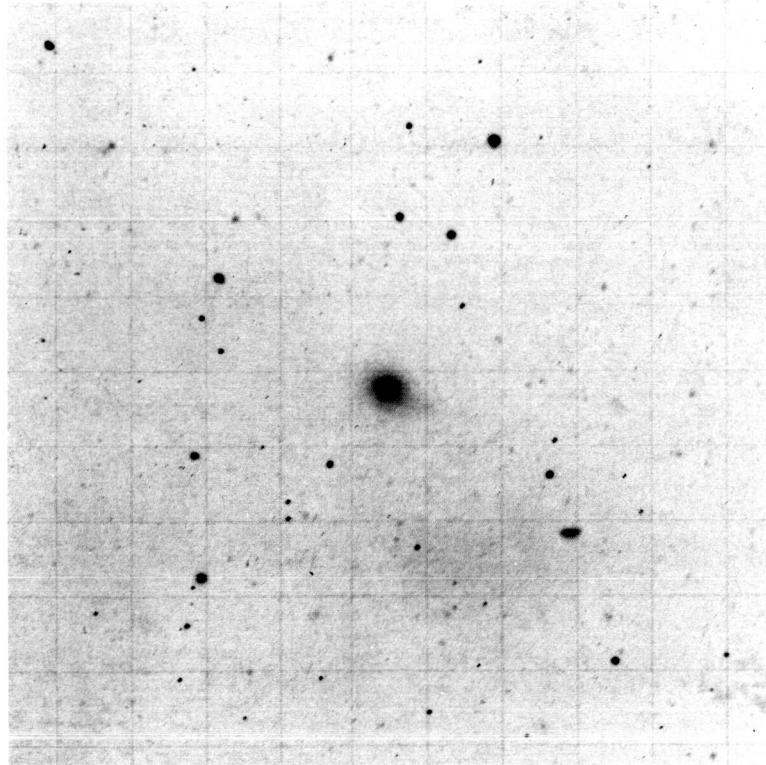


Figure 41. 1910 February 28.222; exposure 20 minutes; $r = 1.17$,
 $\Delta = 1.89$, $\theta = 32^\circ$, $\alpha = 26^\circ$, $S = 4.1 E4$

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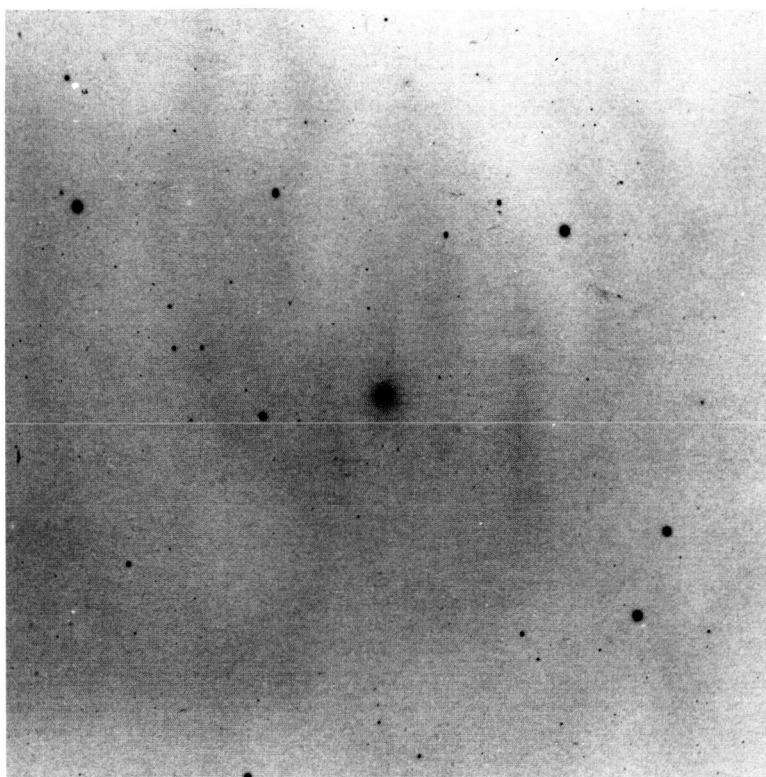


Figure 42. 1910 February 28.624; exposure 21 minutes; $r = 1.17$,
 $\Delta = 1.89$, $\theta = 31^\circ$, $\alpha = 26^\circ$, S = 2.5 E4

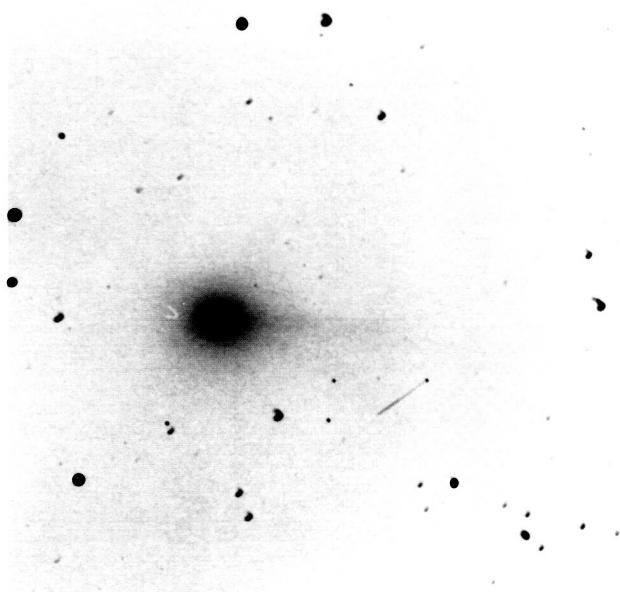


Figure 43. 1910 February 28.690; exposure 65 minutes; $r = 1.16$, $\Delta = 1.89$, $\theta = 31^\circ$, $\alpha = 26^\circ$, S = 2.7 E4

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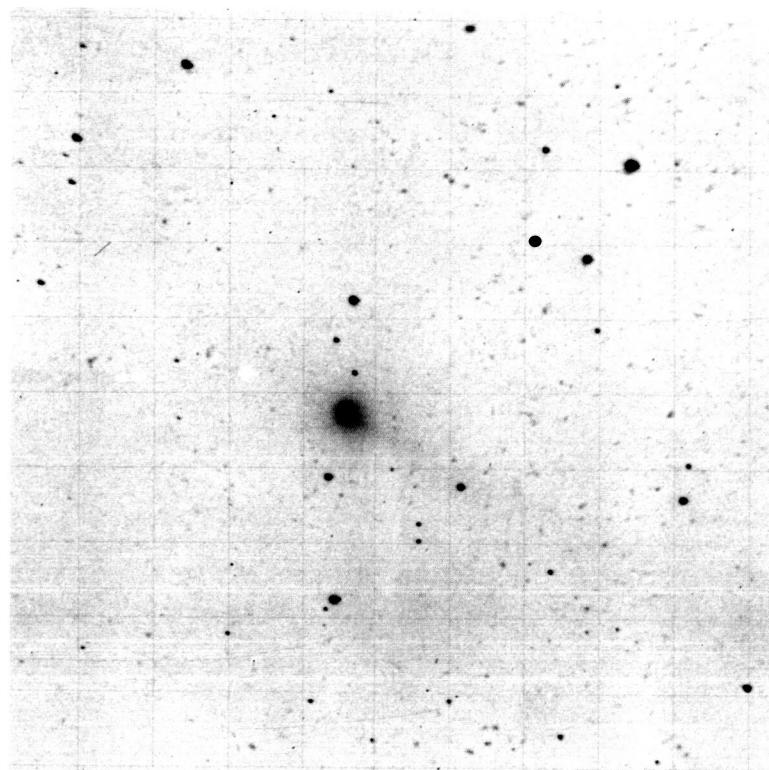


Figure 44. 1910 March 1.222; exposure 30 minutes; $r = 1.16$, $\Delta = 1.89$, $\theta = 30^\circ$, $\alpha = 25^\circ$, $S = 4.1$ E4

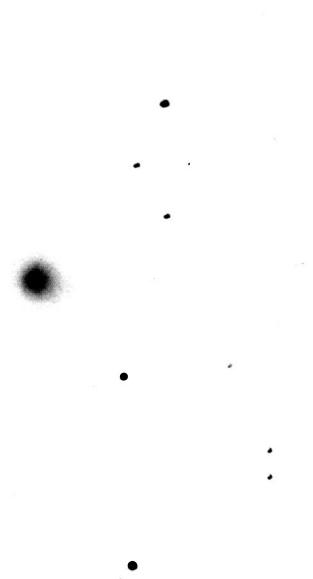


Figure 45. 1910 March 1.650; exposure 43 minutes;
 $r = 1.15$, $\Delta = 1.89$, $\theta = 30^\circ$, $\alpha = 25^\circ$, $S = 2.7$ E4

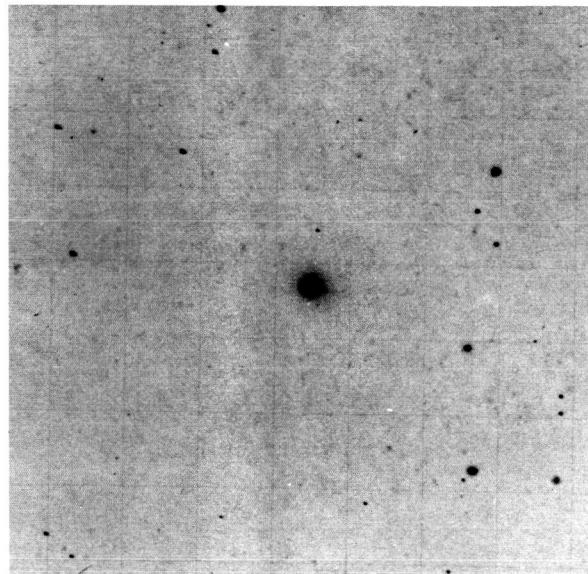


Figure 46. 1910 March 2.221; exposure 25 minutes;
 $r = 1.14$, $\Delta = 1.89$, $\theta = 29^\circ$, $\alpha = 25^\circ$, $S = 4.1$ E4

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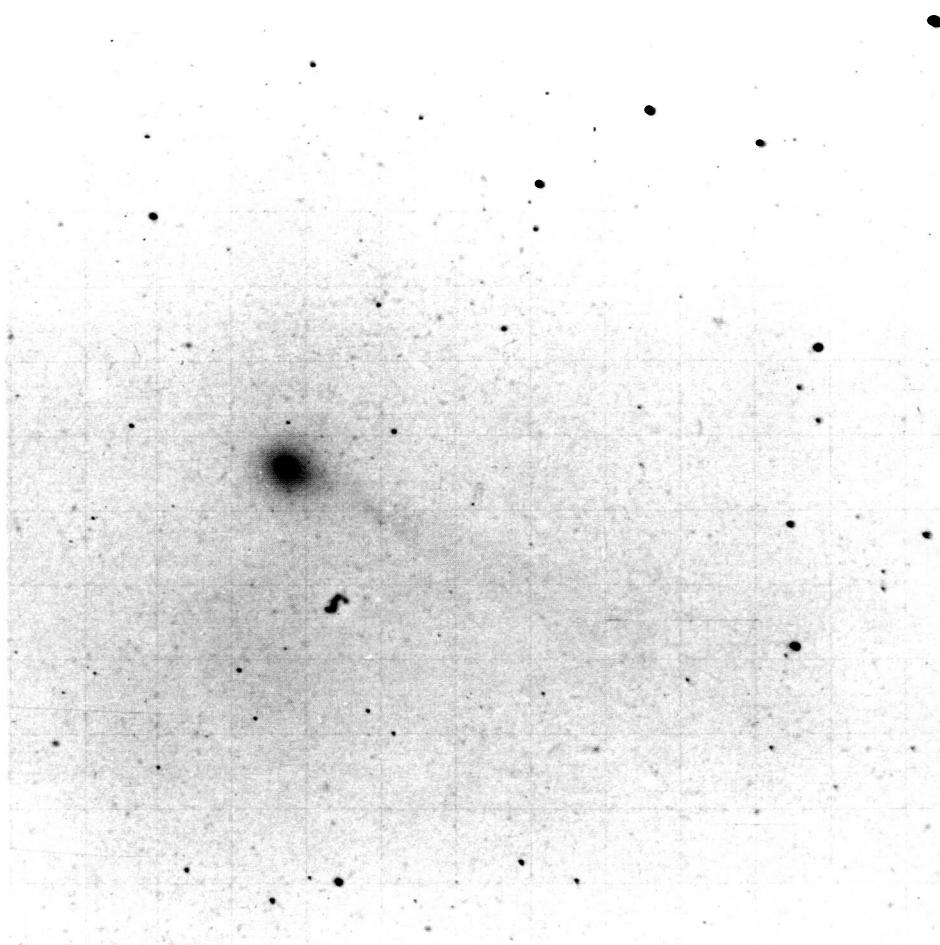


Figure 47. 1910 March 4.222; exposure 25 minutes; $r = 1.11$, $\Delta = 1.89$, $\theta = 27^\circ$,
 $\alpha = 24^\circ$, S = 4.1 E4

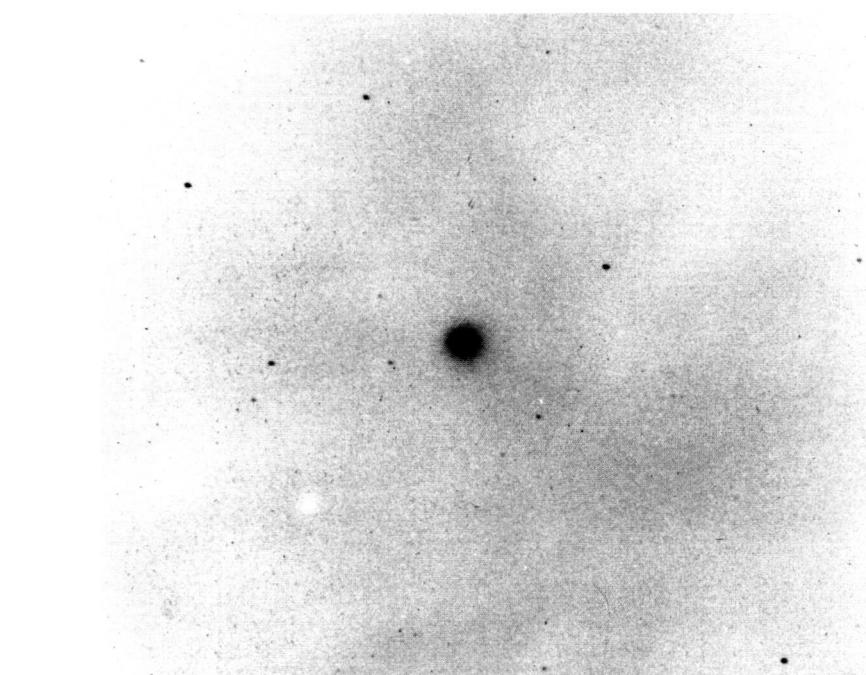


Figure 48. 1910 March 5.616; exposure 28 minutes; $r = 1.09$, $\Delta = 1.89$, $\theta = 25^\circ$, $\alpha = 23^\circ$, S = 2.5 E4

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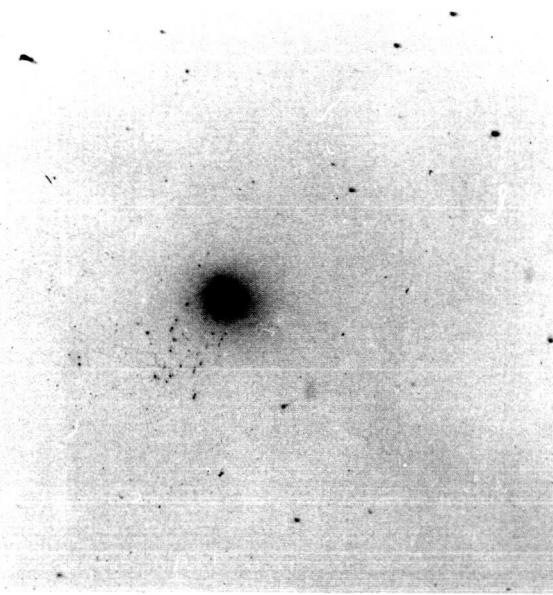


Figure 49. 1910 March 7.646; exposure 34 minutes;
 $r = 1.06$, $\Delta = 1.89$, $\theta = 23^\circ$, $\alpha = 21^\circ$, $S = 2.7 \text{ E}4$

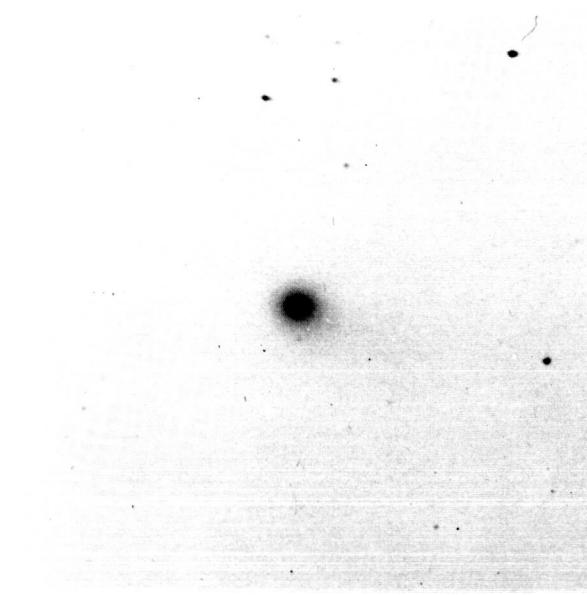


Figure 50. 1910 March 9.646; exposure 33 minutes;
 $r = 1.03$, $\Delta = 1.89$, $\theta = 21^\circ$, $\alpha = 20^\circ$, $S = 2.7 \text{ E}4$

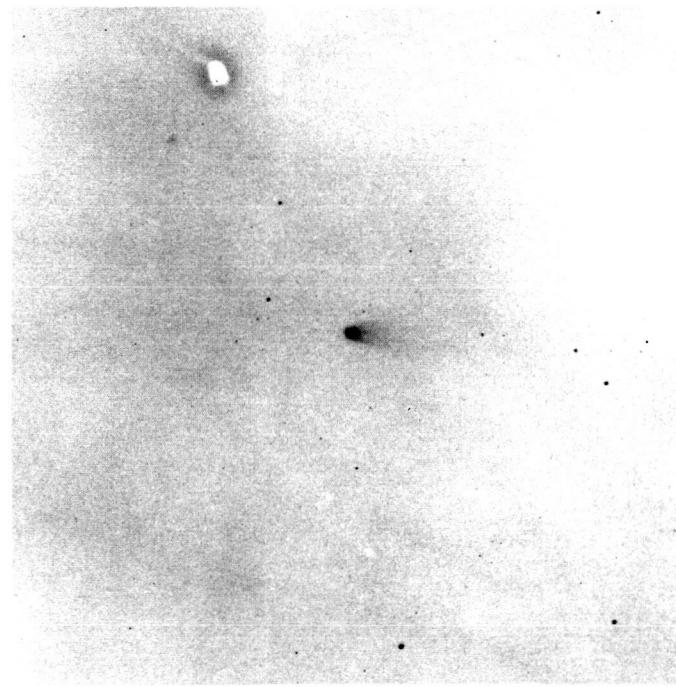


Figure 51. 1910 April 14.135; exposure 6 minutes; $r = 0.60$,
 $\Delta = 1.38$, $\theta = 22^\circ$, $\alpha = 40^\circ$, $S = 1.3 \text{ E}5$

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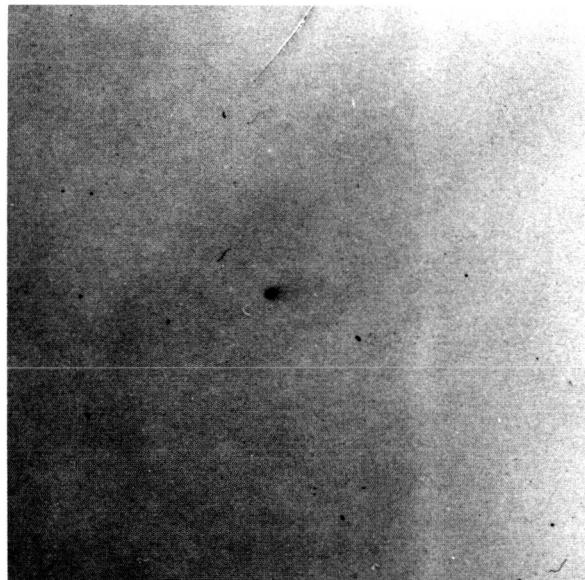


Figure 52. 1910 April 15.994; exposure 25 minutes;
 $r = 0.59$, $\Delta = 1.32$, $\theta = 24^\circ$, $\alpha = 45^\circ$, $S = 1.1 \text{ E}5$

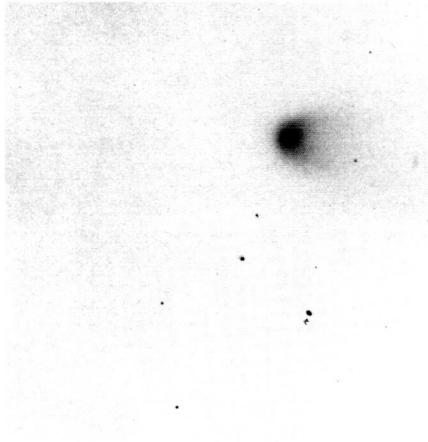


Figure 53. 1910 April 15.014; exposure 11 minutes; $r = 0.59$,
 $\Delta = 1.35$, $\theta = 23^\circ$, $\alpha = 42^\circ$, $S = 1.9 \text{ E}4$

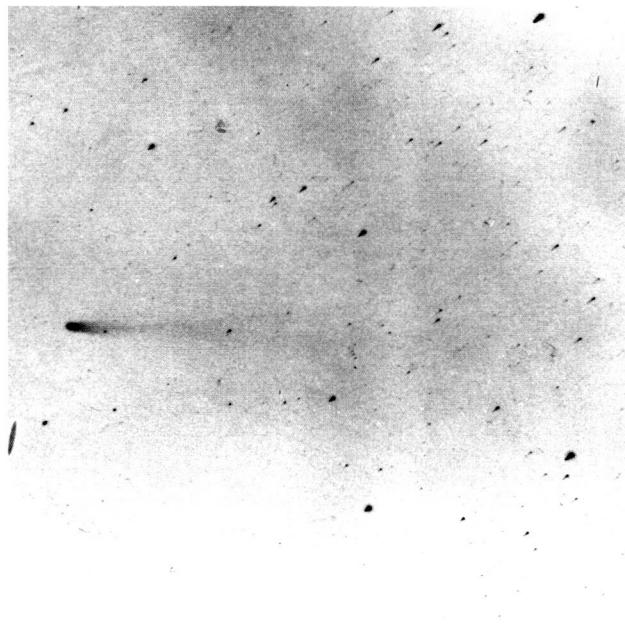


Figure 54. 1910 April 16.981; exposure 20 minutes; $r = 0.59$, $\Delta = 1.29$, $\theta = 26^\circ$, $\alpha = 48^\circ$, $S = 3.7 \text{ E}5$

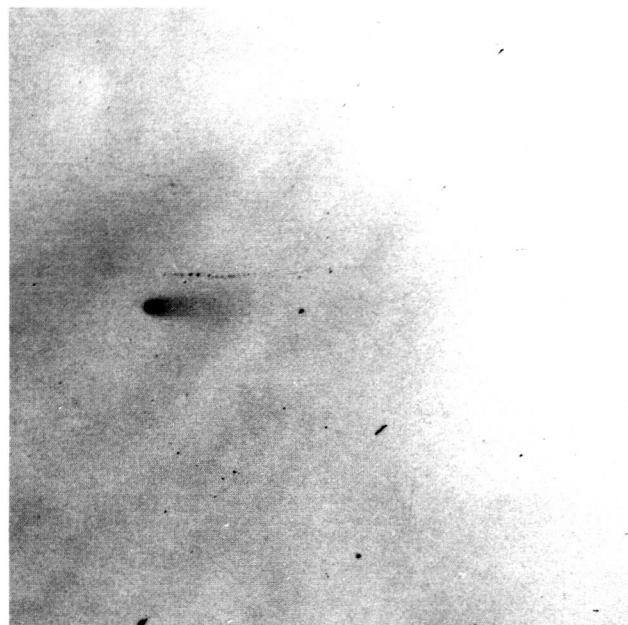


Figure 55. 1910 April 16.985; exposure 25 minutes; $r = 0.59$, $\Delta = 1.29$, $\theta = 26^\circ$, $\alpha = 48^\circ$, $S = 1.1 \text{ E}5$

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Figure 56-1. 1910 April 16.011; exposure 24 minutes; $r = 0.59$, $\Delta = 1.32$, $\theta = 24^\circ$, $\alpha = 45^\circ$, S = 1.9 E4

Figure 56-2. 1910 April 16.011; exposure 24 minutes; $r = 0.59$, $\Delta = 1.32$, $\theta = 24^\circ$, $\alpha = 45^\circ$, S = 1.9 E4

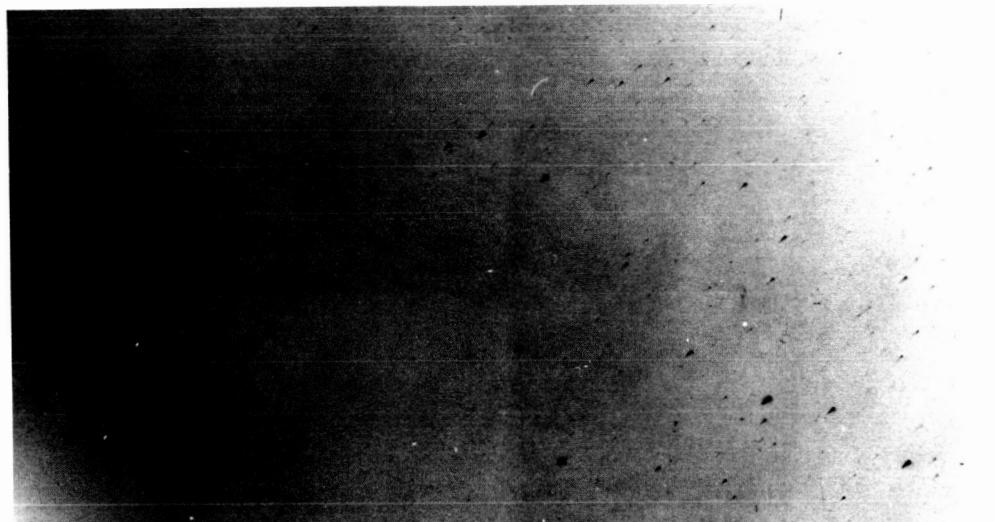


Figure 57. 1910 April 17.980; exposure 24 minutes; $r = 0.58$, $\Delta = 1.26$, $\theta = 27^\circ$, $\alpha = 51^\circ$, S = 3.6 E5

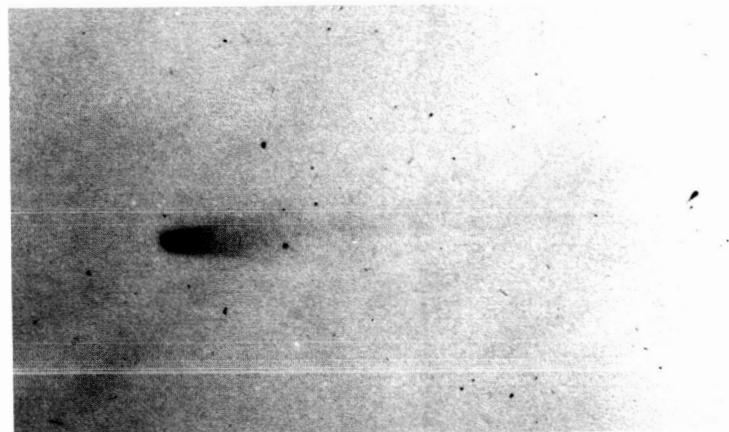


Figure 58. 1910 April 17.981; exposure 36 minutes; $r = 0.58$, $\Delta = 1.26$, $\theta = 27^\circ$, $\alpha = 51^\circ$, S = 1.1 E5

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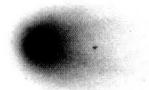


Figure 59-1. 1910 April 17.009; exposure 27 minutes;
 $r = 0.59$, $\Delta = 1.29$, $\theta = 26^\circ$, $\alpha = 48^\circ$, $S = 1.8$ E4

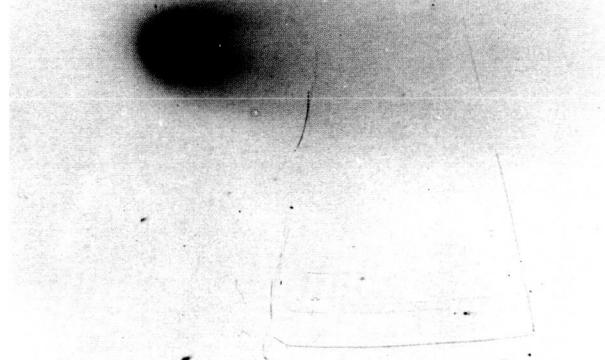


Figure 59-2. 1910 April 17.009; exposure 27 minutes;
 $r = 0.59$, $\Delta = 1.29$, $\theta = 26^\circ$, $\alpha = 48^\circ$, $S = 1.8$ E4

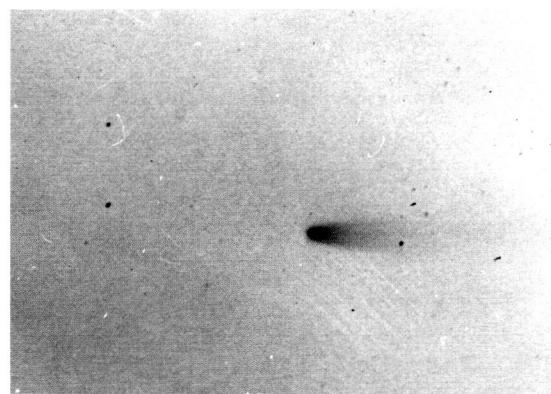


Figure 60. 1910 April 18.006; exposure 28 minutes; $r = 0.58$, $\Delta = 1.26$, $\theta = 27^\circ$, $\alpha = 51^\circ$, $S = 1.4$ E5

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Figure 61. 1910 April 18.976; exposure 26 minutes; $r = 0.58$, $\Delta = 1.23$, $\theta = 28^\circ$, $\alpha = 53^\circ$, S = 3.5 E5

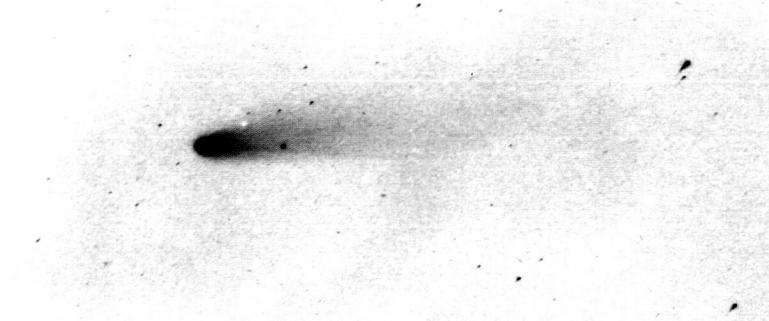


Figure 62. 1910 April 18.977; exposure 36 minutes; $r = 0.58$, $\Delta = 1.23$, $\theta = 28^\circ$, $\alpha = 53^\circ$, S = 1.0 E5

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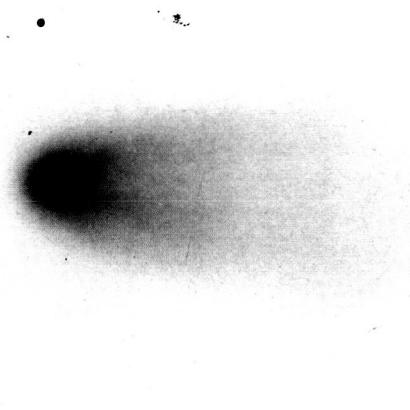


Figure 63-1. 1910 April 18.006; exposure 28 minutes; $r = 0.58$, $\Delta = 1.26$, $\theta = 27^\circ$, $\alpha = 51^\circ$, $S = 1.8 \text{ E}4$

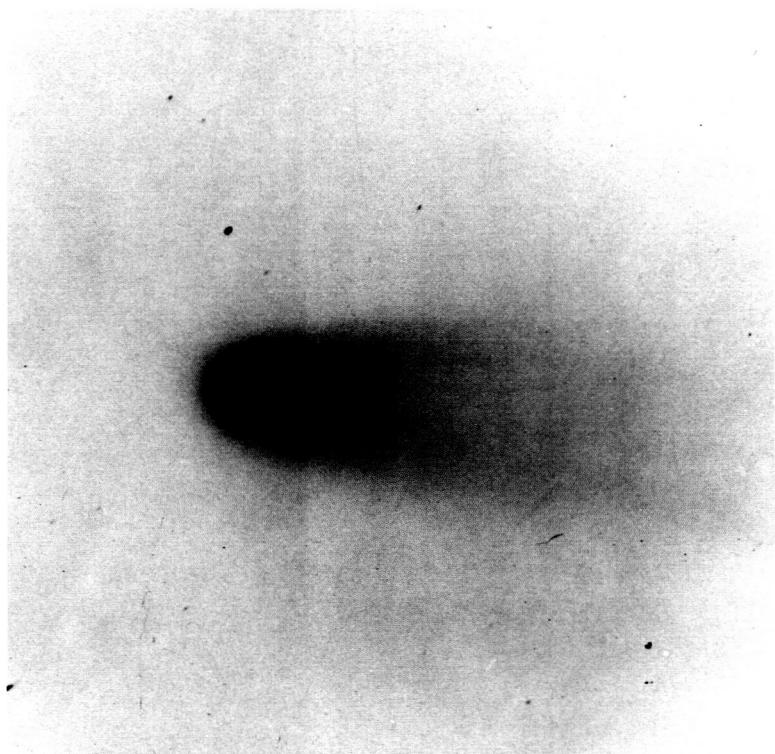


Figure 63-2. 1910 April 18.006; exposure 28 minutes; $r = 0.58$, $\Delta = 1.26$, $\theta = 27^\circ$, $\alpha = 51^\circ$, $S = 1.8 \text{ E}4$

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Figure 64. 1910 April 18.322; exposure 20 minutes; $r = 0.58$, $\Delta = 1.25$, $\theta = 27^\circ$, $\alpha = 52^\circ$, S = 2.7 E4

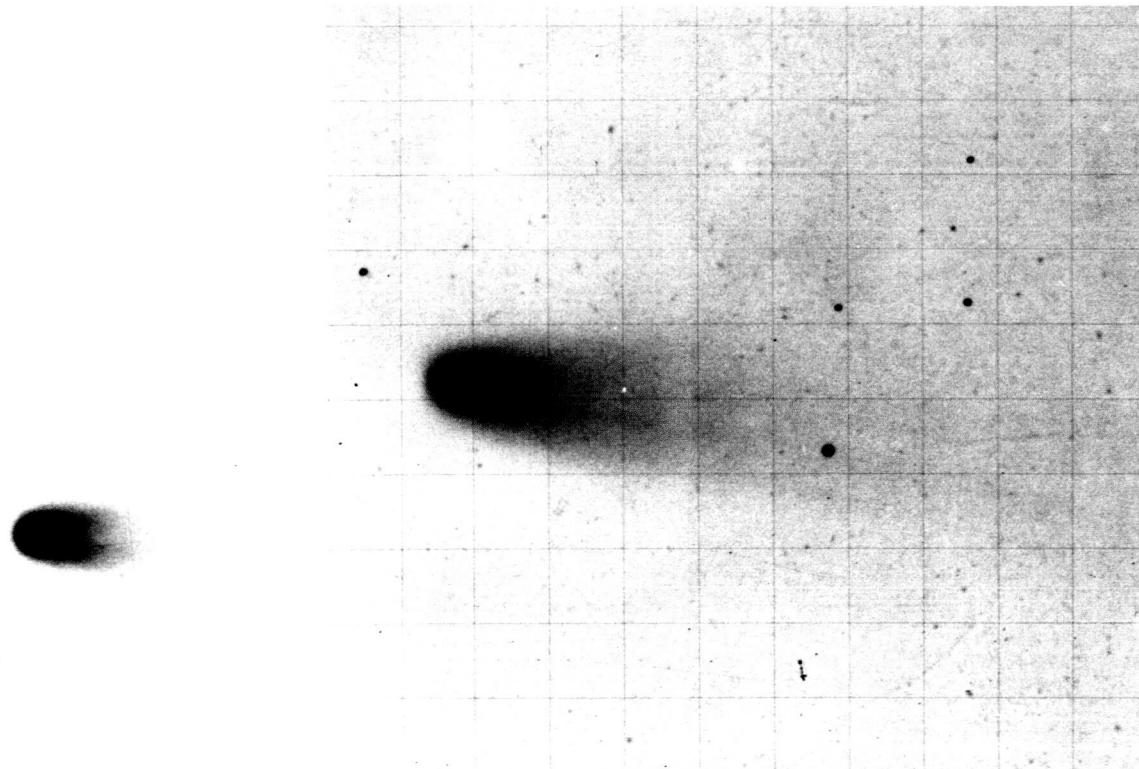


Figure 65-1. 1910 April 18.577; exposure 6 minutes; $r = 0.58$, $\Delta = 1.24$, $\theta = 27^\circ$, $\alpha = 52^\circ$, S = 2.7 E5

Figure 65-2. 1910 April 18.577; exposure 6 minutes; $r = 0.58$, $\Delta = 1.24$, $\theta = 27^\circ$, $\alpha = 52^\circ$, S = 2.7 E5

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Figure 66. 1910 April 19.975; exposure 33 minutes; $r = 0.58$,
 $\Delta = 1.19$, $\theta = 29^\circ$, $\alpha = 56^\circ$, $S = 1.0 \text{ E}5$

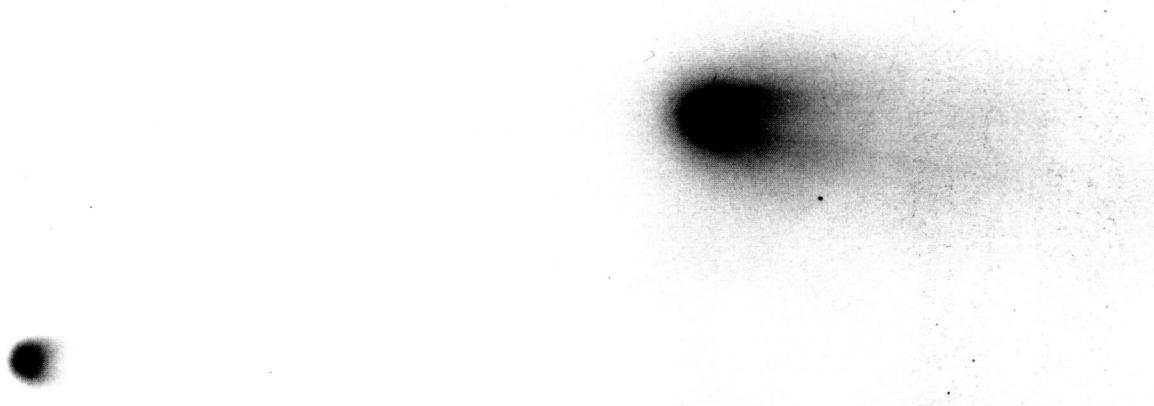


Figure 67-1. 1910 April 19.016; exposure
65 minutes; $r = 0.58$, $\Delta = 1.23$, $\theta = 28^\circ$,
 $\alpha = 54^\circ$, $S = 1.7 \text{ E}4$

Figure 67-2. 1910 April 19.016; exposure 65 minutes; $r = 0.58$,
 $\Delta = 1.23$, $\theta = 28^\circ$, $\alpha = 54^\circ$, $S = 1.7 \text{ E}4$

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Figure 68-1. 1910 April 19.577; exposure
10 minutes; $r = 0.58$, $\Delta = 1.21$, $\theta = 28^\circ$,
 $\alpha = 55^\circ$, $S = 2.6 \text{ E}4$

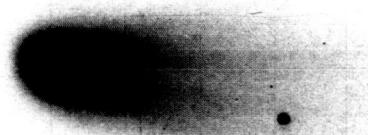


Figure 68-2. 1910 April 19.577; exposure 10 minutes; $r = 0.58$, $\Delta = 1.21$, $\theta = 28^\circ$, $\alpha = 55^\circ$, $S = 2.6 \text{ E}4$

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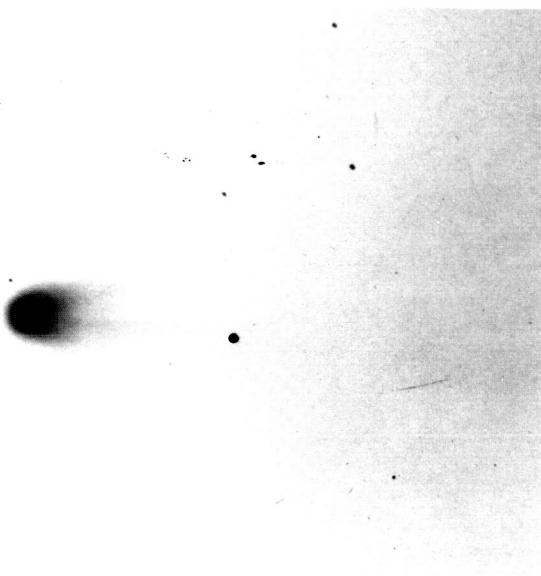


Figure 69. 1910 April 19.897; exposure 30 minutes; $r = 0.58$,
 $\Delta = 1.20$, $\theta = 29^\circ$, $\alpha = 56^\circ$, S = 2.6 E4

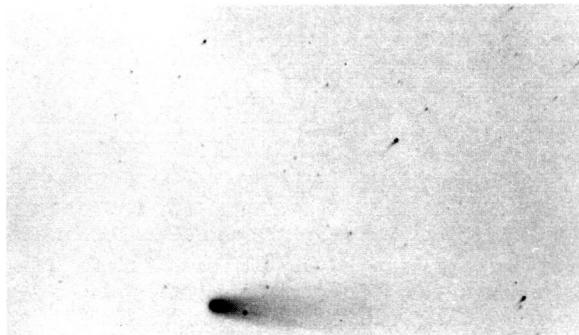


Figure 70. 1910 April 20.002; exposure 35 minutes;
 $r = 0.58$, $\Delta = 1.19$, $\theta = 29^\circ$, $\alpha = 56^\circ$, S = 1.5 E5

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Figure 71. 1910 April 20.436; exposure 24 minutes; $r = 0.58$, $\Delta = 1.18$,
 $\theta = 29^\circ$, $\alpha = 58^\circ$, S = 4.7 E4

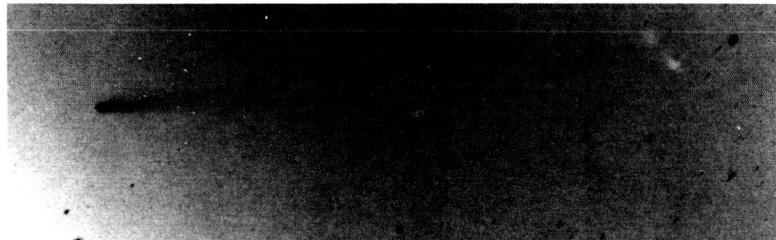


Figure 72. 1910 April 20.973; exposure 27 minutes; $r = 0.58$, $\Delta = 1.16$, $\theta = 30^\circ$, $\alpha = 59^\circ$, S = 3.3 E5

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Figure 73-1. 1910 April 20.018; exposure 5 minutes;
 $r = 0.58, \Delta = 1.19, \theta = 29^\circ, \alpha = 56^\circ, S = 1.7 \text{ E}4$

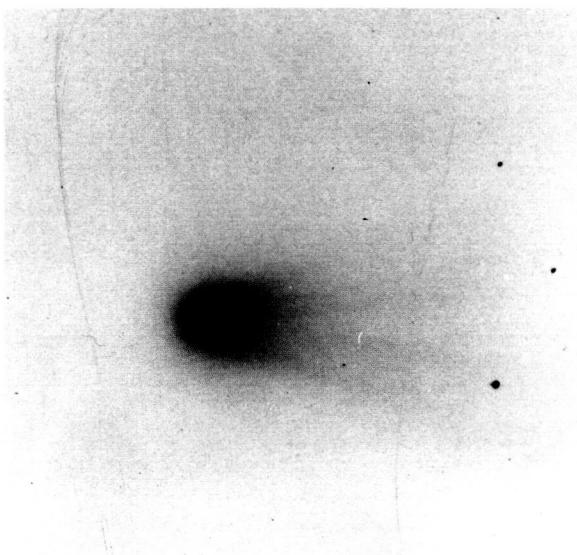


Figure 73-2. 1910 April 20.018; exposure 5 minutes;
 $r = 0.58, \Delta = 1.19, \theta = 29^\circ, \alpha = 56^\circ, S = 1.7 \text{ E}4$

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Figure 74. 1910 April 21.005; exposure 30 minutes; $r = 0.58$, $\Delta = 1.16$,
 $\theta = 30^\circ$, $\alpha = 59^\circ$, $S = 1.3 \text{ E}5$

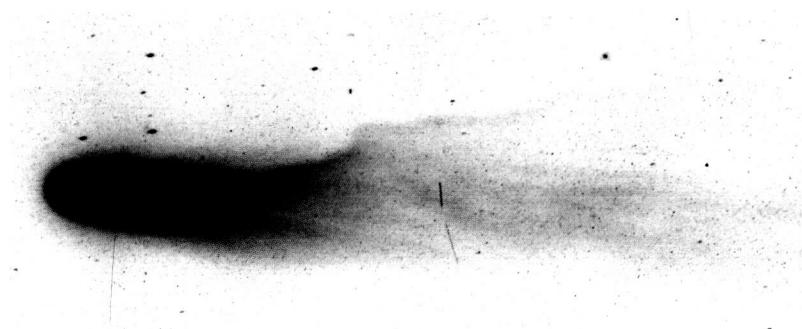


Figure 75. 1910 April 21.480; exposure 33 minutes; $r = 0.58$, $\Delta = 1.14$,
 $\theta = 30^\circ$, $\alpha = 61^\circ$, $S = 4.6 \text{ E}4$

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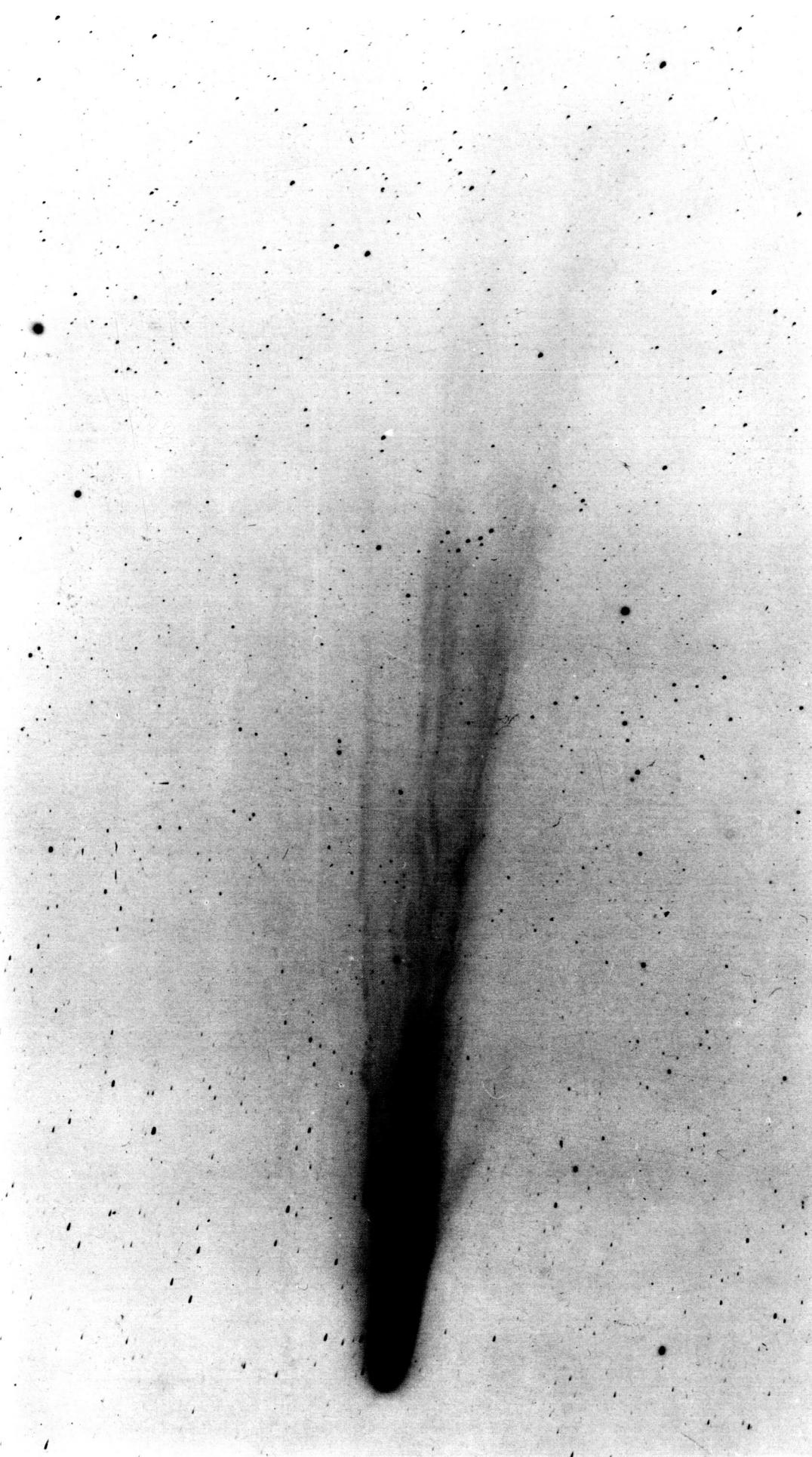


Figure 76. 1910 April 21.629; exposure 45 minutes; $r = 0.58$, $\Delta = 1.14$, $\theta = 31^\circ$, $\alpha = 61^\circ$, $S = 7.5 \text{ E}4$

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Figure 77-1. 1910 April 21.906; exposure 30 minutes; $r = 0.58$, $\Delta = 1.13$, $\theta = 31^\circ$, $\alpha = 62^\circ$,
 $S = 7.3$ E4

Figure 77-2. 1910 April 21.906; exposure 30 minutes; $r = 0.58$, $\Delta = 1.13$, $\theta = 31^\circ$, $\alpha = 62^\circ$,
 $S = 7.3$ E4



Figure 77-3. 1910 April 21.906; exposure 30 minutes; $r = 0.58$, $\Delta = 1.13$, $\theta = 31^\circ$, $\alpha = 62^\circ$, $S = 7.3$ E4

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Figure 78-1. 1910 April 21.907; exposure 40 minutes; $r = 0.58$, $\Delta = 1.13$, $\theta = 31^\circ$, $\alpha = 62^\circ$, $S = 1.1 \text{ E}5$

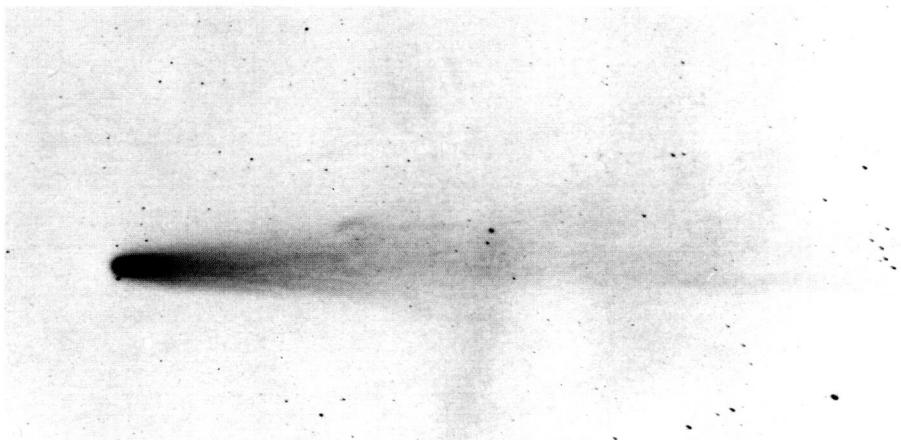
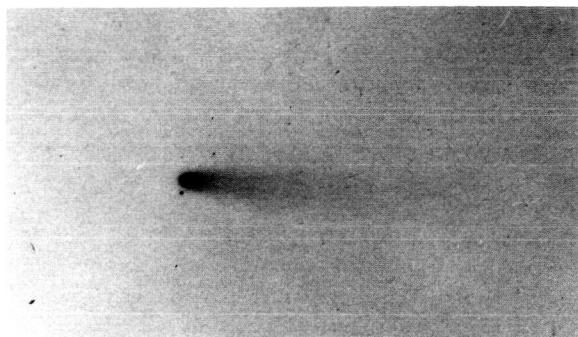


Figure 78-2. 1910 April 21.907; exposure 40 minutes; $r = 0.58$, $\Delta = 1.13$, $\theta = 31^\circ$, $\alpha = 62^\circ$, $S = 1.1 \text{ E}5$

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Figure 79. 1910 April 21.979; exposure 28 minutes;
 $r = 0.58$, $\Delta = 1.12$, $\theta = 31^\circ$, $\alpha = 62^\circ$, $S = 9.5 \text{ E}4$



Figure 80. 1910 April 21.311; exposure 54 minutes; $r = 0.58$, $\Delta = 1.15$, $\theta = 30^\circ$,
 $\alpha = 60^\circ$, $S = 2.5 \text{ E}4$



Figure 81-1. 1910 April 21.577; exposure 20 minutes;
 $r = 0.58$, $\Delta = 1.14$, $\theta = 30^\circ$, $\alpha = 61^\circ$, $S = 2.5 \text{ E}4$



Figure 81-2. 1910 April 21.577; exposure 20 minutes; $r = 0.58$, $\Delta = 1.14$, $\theta = 30^\circ$, $\alpha = 61^\circ$, $S = 2.5 \text{ E}4$

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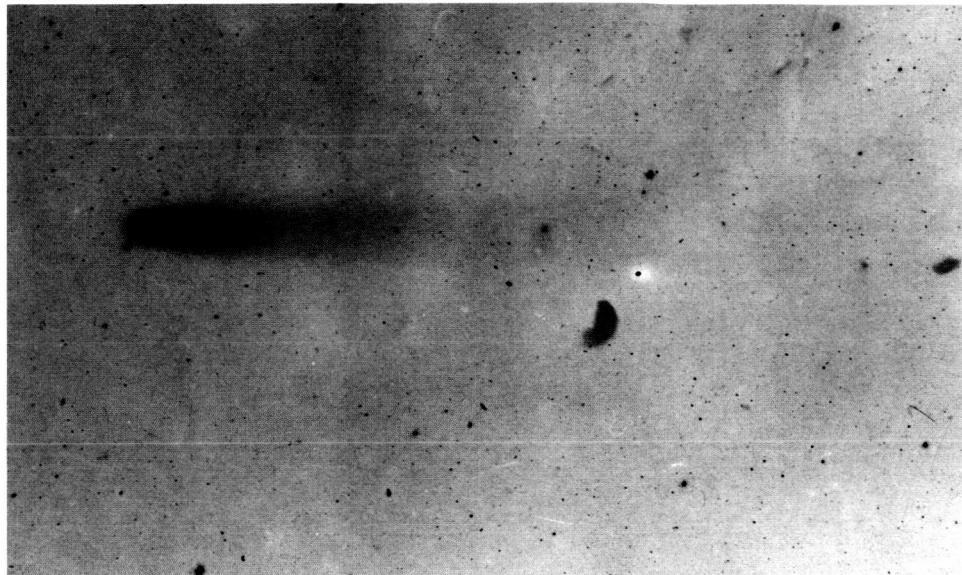


Figure 82. 1910 April 22.317; exposure 30 minutes; $r = 0.59$, $\Delta = 1.11$, $\theta = 31^\circ$, $\alpha = 63^\circ$, $S = 7.8$ E4

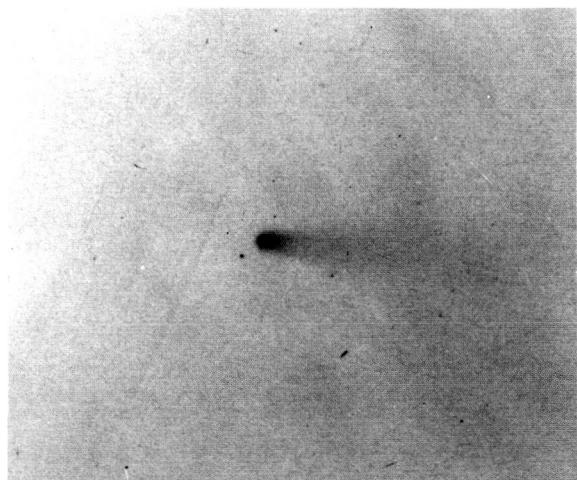


Figure 83-1. 1910 April 22.478; exposure 38 minutes; $r = 0.59$, $\Delta = 1.11$, $\theta = 31^\circ$, $\alpha = 64^\circ$, $S = 4.4$ E4

Figure 84. 1910 April 22.974; exposure 24 minutes; $r = 0.59$, $\Delta = 1.09$, $\theta = 32^\circ$, $\alpha = 65^\circ$, $S = 9.2$ E4

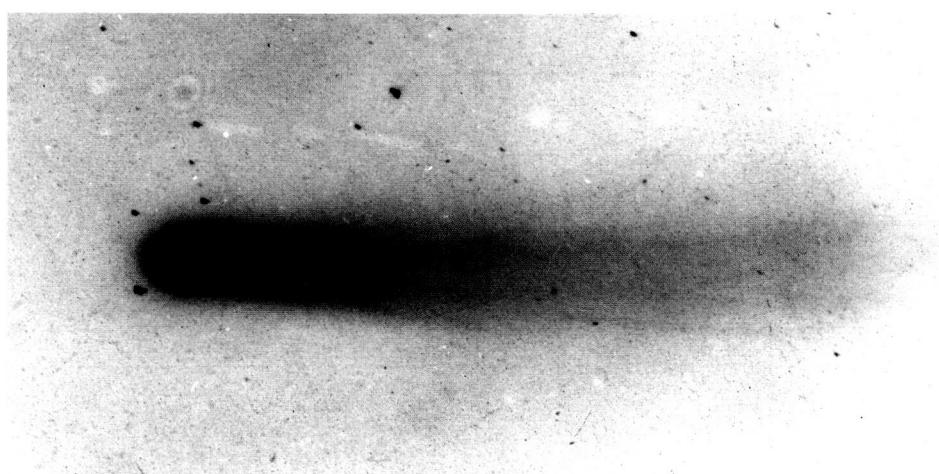


Figure 83-2. 1910 April 22.478; exposure 38 minutes; $r = 0.59$, $\Delta = 1.11$, $\theta = 31^\circ$, $\alpha = 64^\circ$, $S = 4.4$ E4

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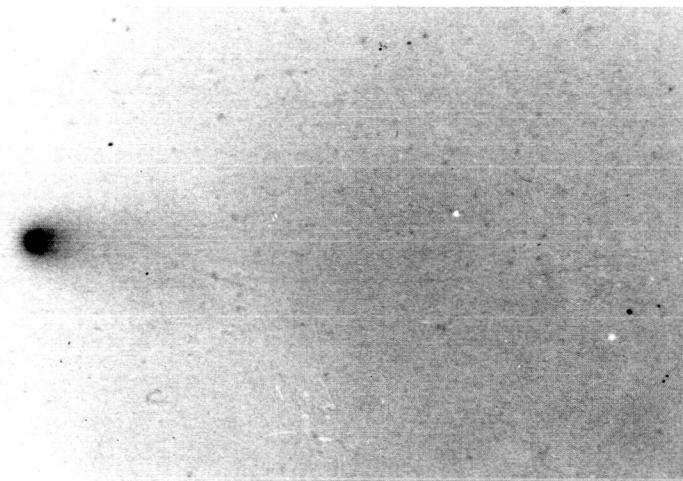


Figure 85. 1910 April 22.577; exposure 10 minutes; $r = 0.59$, $\Delta = 1.10$, $\theta = 32^\circ$, $\alpha = 64^\circ$, S = 2.4 E4

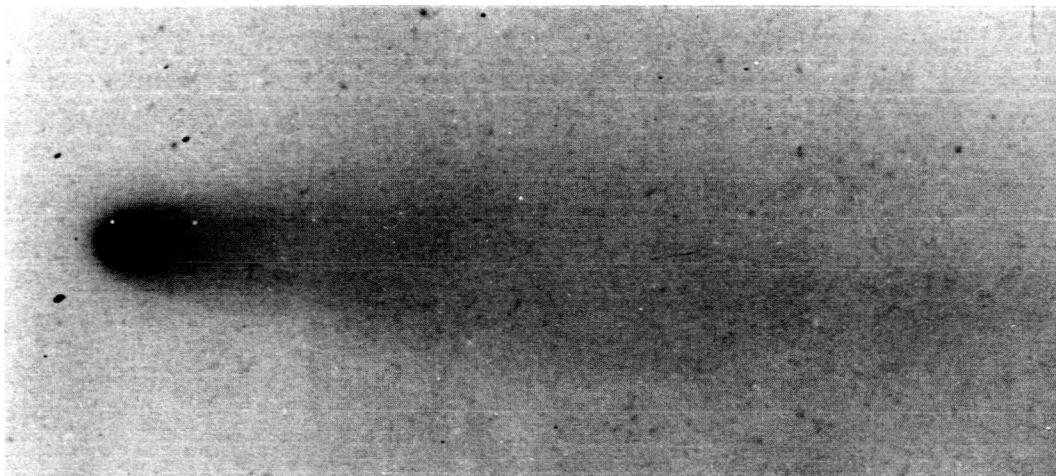


Figure 86. 1910 April 22.584; exposure 12 minutes; $r = 0.59$, $\Delta = 1.10$, $\theta = 32^\circ$, $\alpha = 64^\circ$, S = 2.4 E4

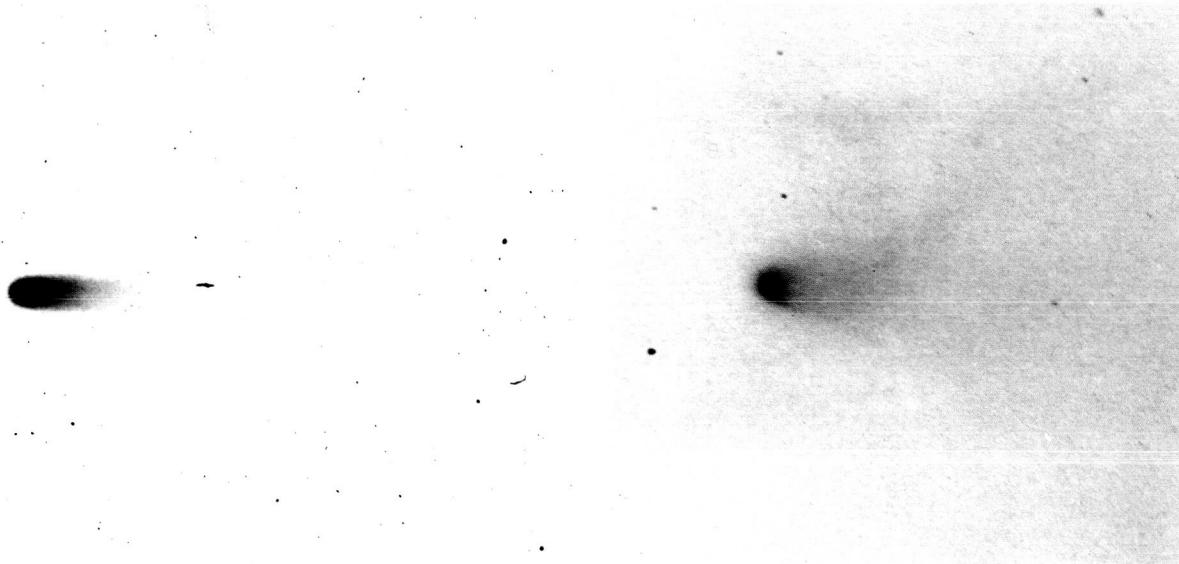


Figure 87. 1910 April 23.317; exposure 39 minutes; $r = 0.59$, $\Delta = 1.08$, $\theta = 33^\circ$, $\alpha = 66^\circ$, S = 7.6 E4

Figure 88. 1910 April 23.580; exposure 6 minutes; $r = 0.59$, $\Delta = 1.07$, $\theta = 33^\circ$, $\alpha = 67^\circ$, S = 2.3 E4

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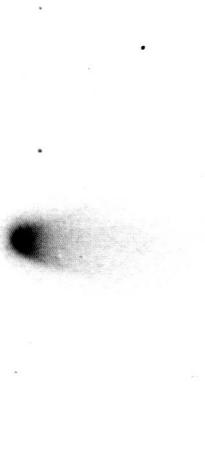


Figure 89-1. 1910 April 23.585; exposure 5 minutes;
 $r = 0.59$, $\Delta = 1.07$, $\theta = 33^\circ$, $\alpha = 67^\circ$, $S = 2.3 \text{ E}4$

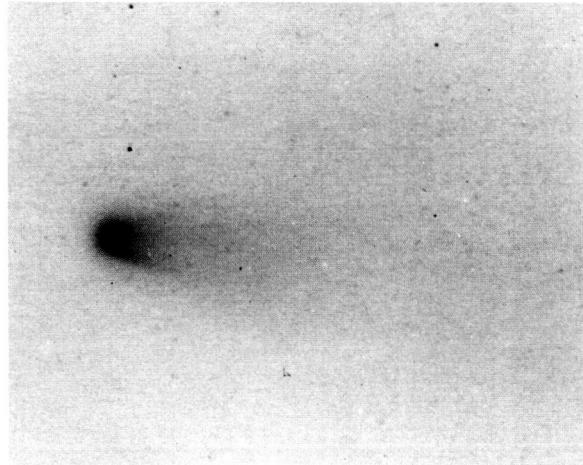


Figure 89-2. 1910 April 23.585; exposure 5 minutes;
 $r = 0.59$, $\Delta = 1.07$, $\theta = 33^\circ$, $\alpha = 67^\circ$, $S = 2.3 \text{ E}4$



Figure 91-1. 1910 April 24.485; exposure 15 minutes;
 $r = 0.59$, $\Delta = 1.04$, $\theta = 33^\circ$, $\alpha = 70^\circ$,
 $S = 4.1 \text{ E}4$

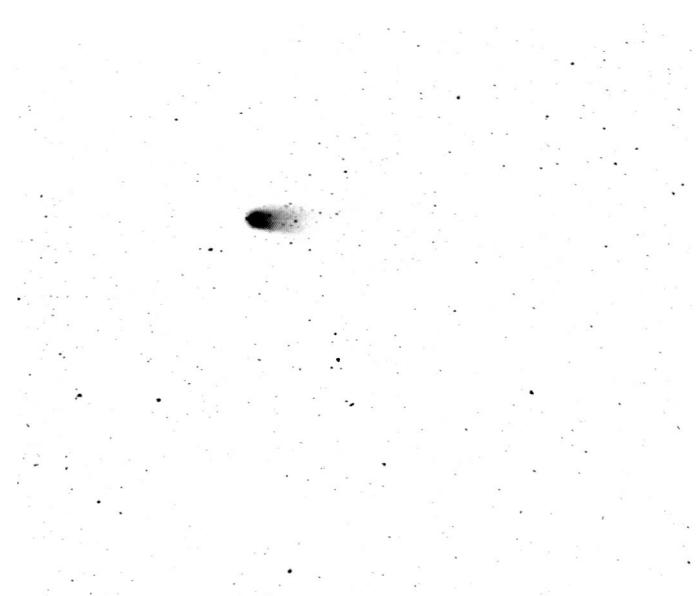


Figure 90. 1910 April 24.311; exposure 52 minutes; $r = 0.59$, $\Delta = 1.04$, $\theta = 33^\circ$, $\alpha = 69^\circ$, $S = 7.3 \text{ E}4$

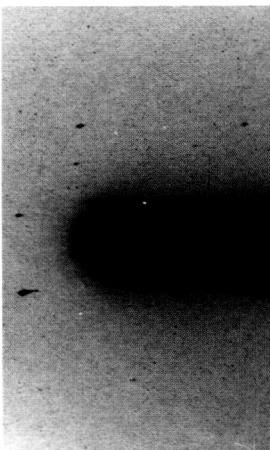


Figure 91-2. 1910 April 24.485; exposure 15 minutes; $r = 0.59$, $\Delta = 1.04$, $\theta = 33^\circ$,
 $\alpha = 70^\circ$, $S = 4.1 \text{ E}4$

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Figure 92. 1910 April 24.972; exposure 12 minutes; $r = 0.59$, $\Delta = 1.02$, $\theta = 34^\circ$, $\alpha = 71^\circ$, $S = 8.6$ E4

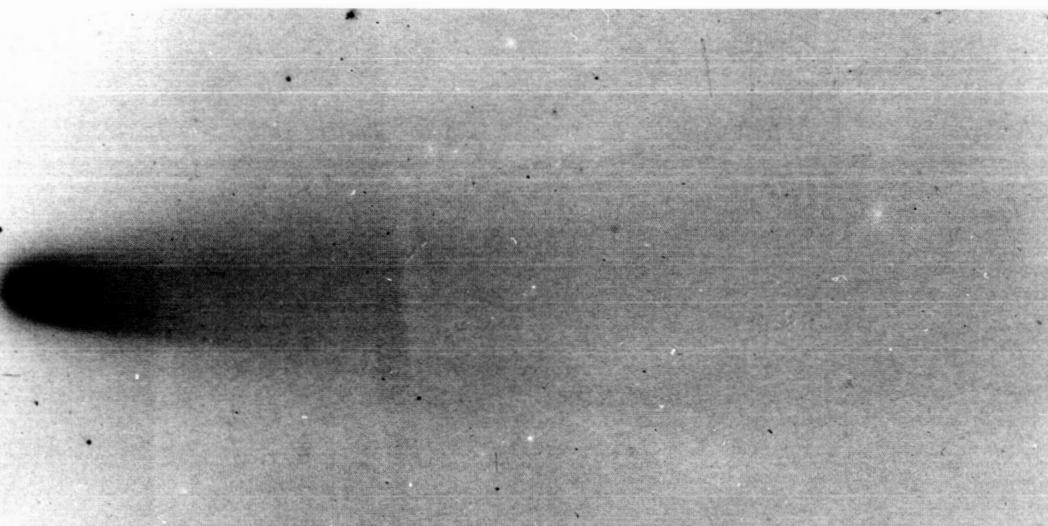


Figure 93. 1910 April 24.876; exposure 15 minutes; $r = 0.59$, $\Delta = 1.02$, $\theta = 34^\circ$, $\alpha = 71^\circ$, $S = 2.2$ E4

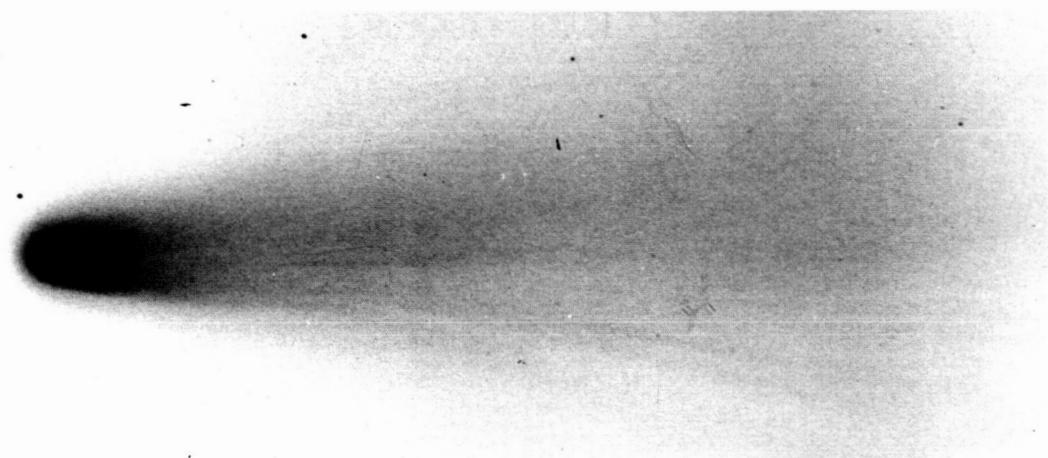


Figure 94. 1910 April 24.890; exposure 15 minutes; $r = 0.59$, $\Delta = 1.02$, $\theta = 34^\circ$, $\alpha = 71^\circ$, $S = 2.2$ E4

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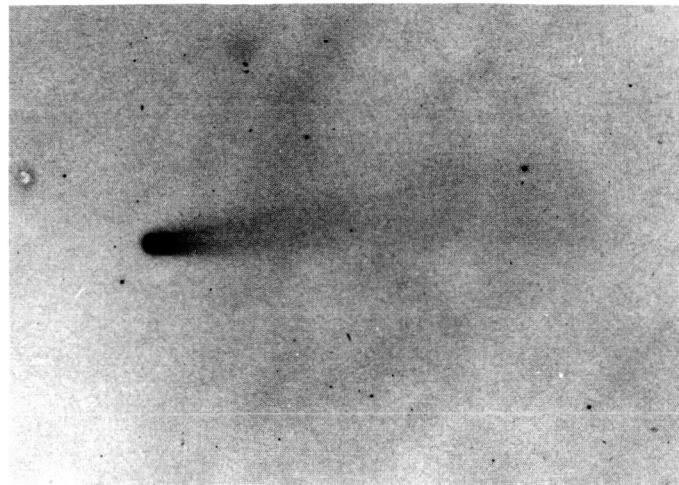


Figure 95. 1910 April 25.969; exposure 15 minutes; $r = 0.60$, $\Delta = 0.98$, $\theta = 35^\circ$, $\alpha = 74^\circ$, $S = 8.3 \text{ E}4$

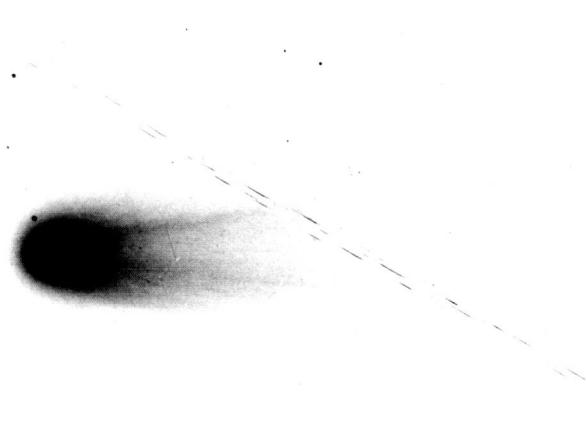


Figure 97-1. 1910 April 25.890; exposure 15 minutes; $r = 0.60$, $\Delta = 0.98$, $\theta = 35^\circ$, $\alpha = 74^\circ$, $S = 2.1 \text{ E}4$

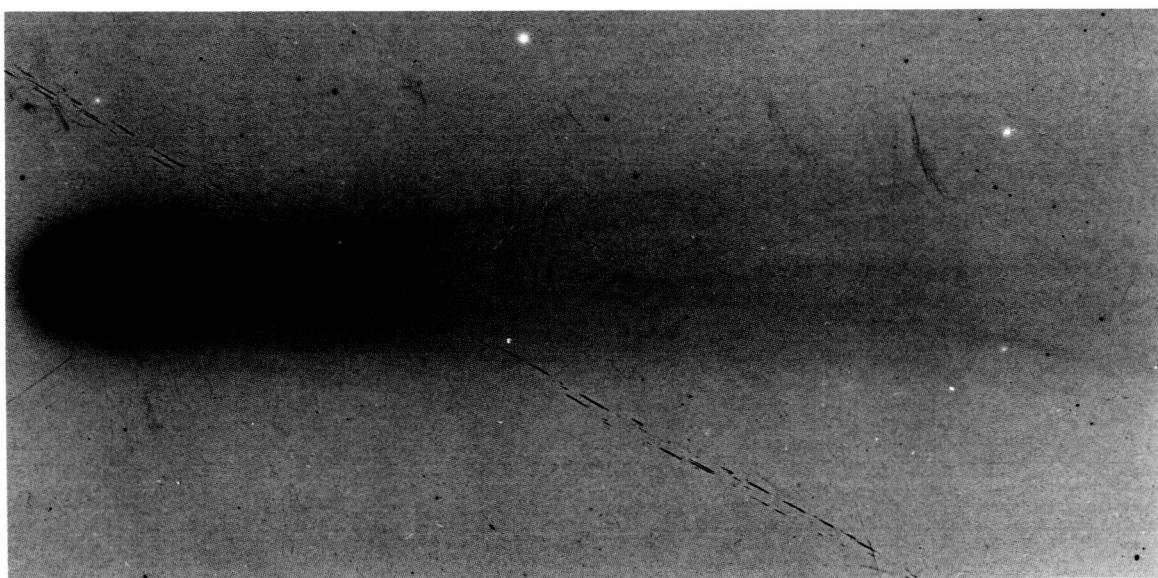


Figure 97-2. 1910 April 25.890; exposure 15 minutes; $r = 0.60$, $\Delta = 0.98$, $\theta = 35^\circ$, $\alpha = 74^\circ$, $S = 2.1 \text{ E}4$

PHOTOGRAPHS OF COMET HALLEY 1910 II

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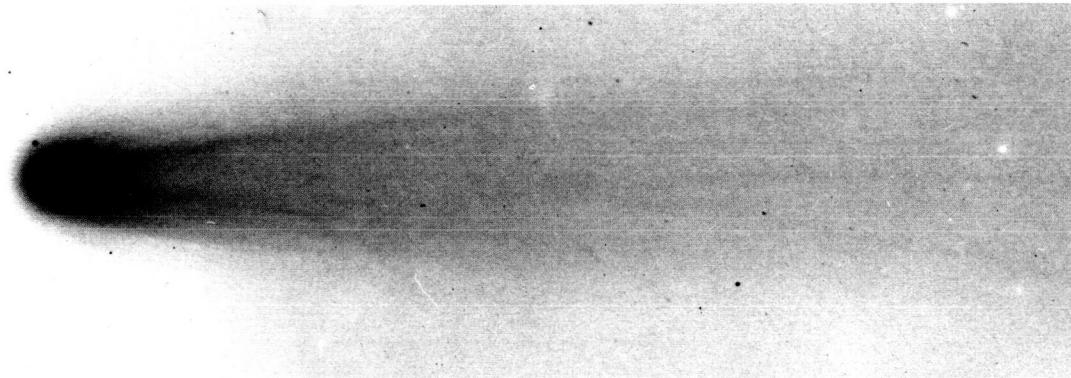


Figure 96. 1910 April 25.877; exposure 15 minutes; $r = 0.60$, $\Delta = 0.98$, $\theta = 35^\circ$, $\alpha = 74^\circ$, $S = 2.2 \text{ E}4$



Figure 98-1. 1910 April 25.903; exposure 5 minutes;
 $r = 0.60$, $\Delta = 0.98$, $\theta = 35^\circ$, $\alpha = 74^\circ$, $S = 2.1 \text{ E}4$

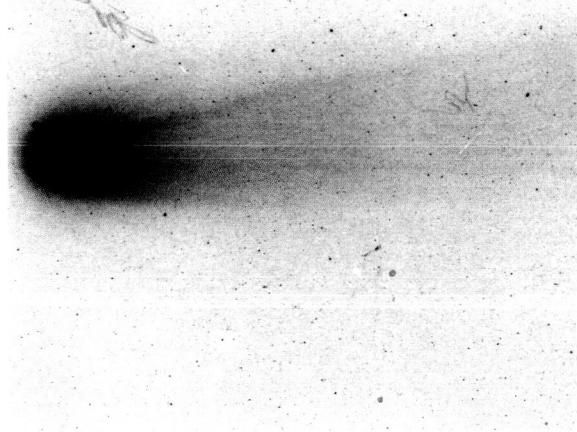


Figure 98-2. 1910 April 25.903; exposure 5 minutes;
 $r = 0.60$, $\Delta = 0.98$, $\theta = 35^\circ$, $\alpha = 74^\circ$, $S = 2.1 \text{ E}4$

ATLAS OF COMET HALLEY 1910 II

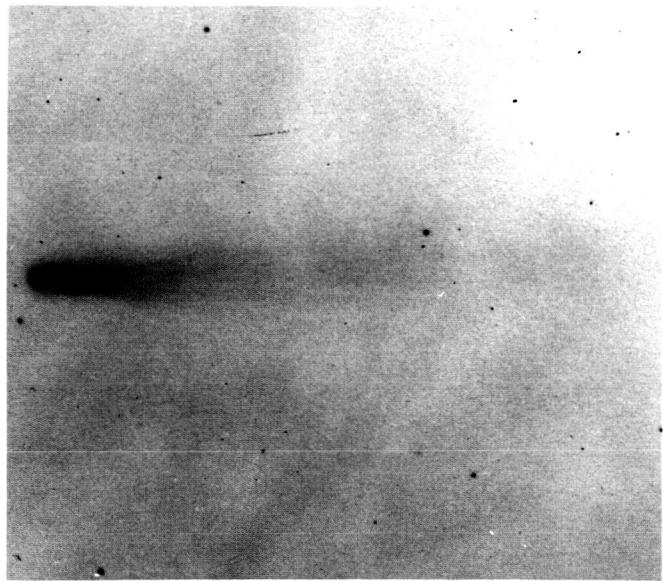


Figure 99. 1910 April 26.978; exposure 19 minutes; $r = 0.60$, $\Delta = 0.94$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 8.0$ E4



Figure 100-1. 1910 April 26.579; exposure 5 minutes; $r = 0.60$, $\Delta = 0.96$, $\theta = 35^\circ$, $\alpha = 76^\circ$, $S = 2.1$ E4

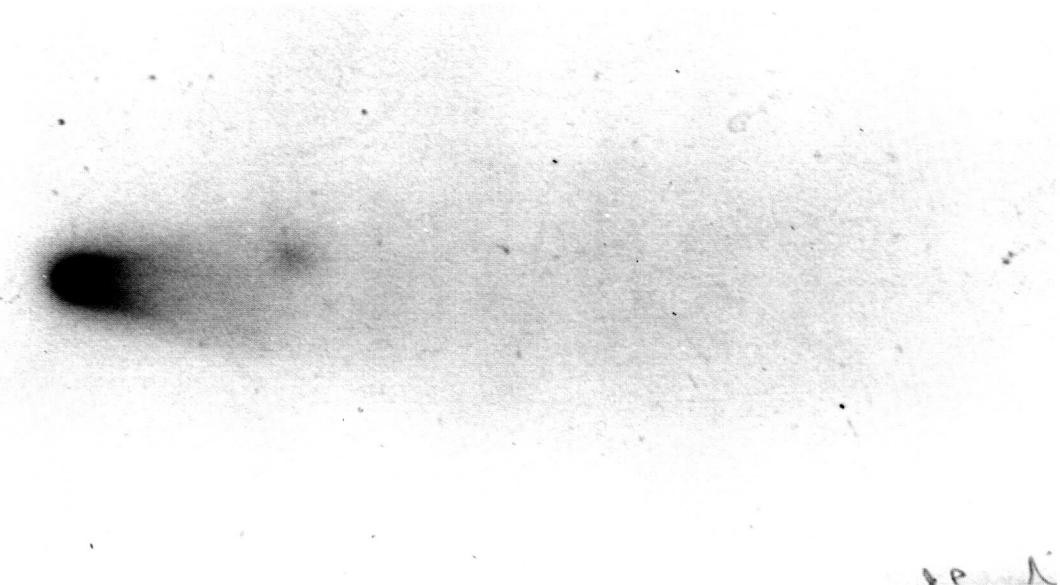


Figure 100-2. 1910 April 26.579; exposure 5 minutes; $r = 0.60$, $\Delta = 0.96$, $\theta = 35^\circ$, $\alpha = 76^\circ$, $S = 2.1$ E4

PHOTOGRAPHS OF COMET HALLEY 1910 II

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Figure 101-1. 1910 April 26.582; exposure 3 minutes; $r = 0.60$, $\Delta = 0.96$, $\theta = 35^\circ$, $\alpha = 76^\circ$, $S = 2.1 \text{ E}4$

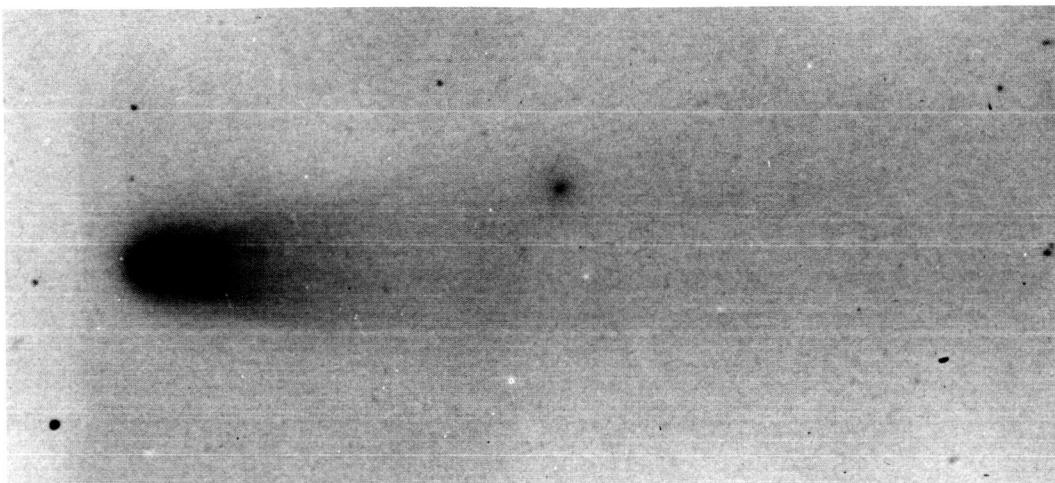


Figure 101-2. 1910 April 26.582; exposure 3 minutes; $r = 0.60$, $\Delta = 0.96$, $\theta = 35^\circ$, $\alpha = 76^\circ$, $S = 2.1 \text{ E}4$

Figure 102-1. 1910 April 26.587; exposure 2 minutes; $r = 0.60$, $\Delta = 0.96$, $\theta = 35^\circ$, $\alpha = 76^\circ$, $S = 2.1 \text{ E}4$

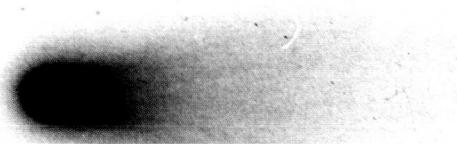


Figure 102-2. 1910 April 26.587; exposure 2 minutes; $r = 0.60$, $\Delta = 0.96$, $\theta = 35^\circ$, $\alpha = 76^\circ$, $S = 2.1 \text{ E}4$

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Figure 103-1. 1910 April 26.594; exposure 3 minutes; $r = 0.60$, $\Delta = 0.96$, $\theta = 35^\circ$, $\alpha = 76^\circ$, $S = 2.1 \text{ E}4$

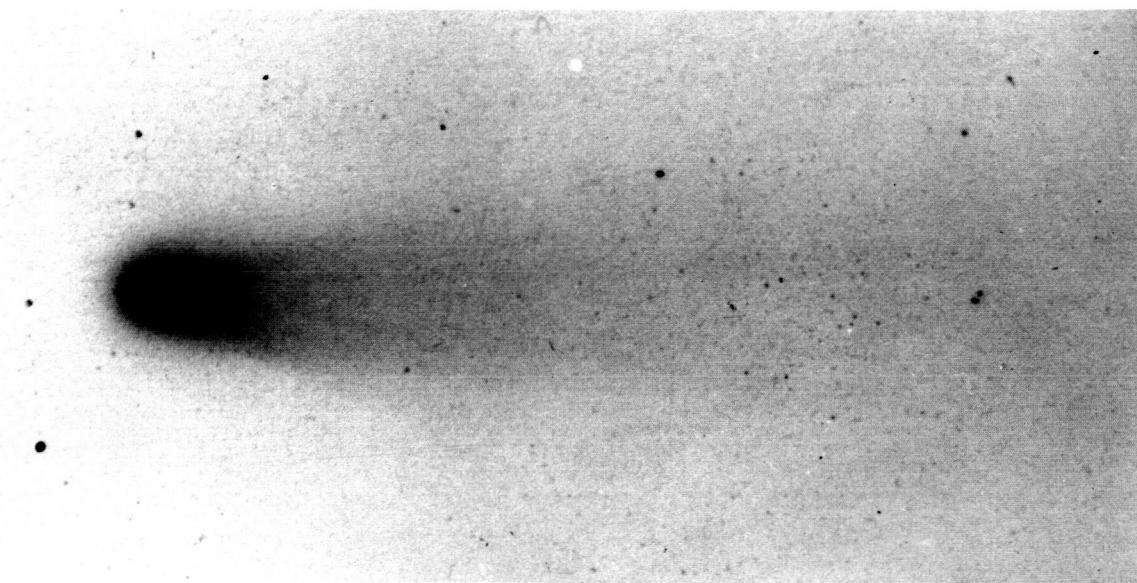


Figure 103-2. 1910 April 26.594; exposure 3 minutes; $r = 0.60$, $\Delta = 0.96$, $\theta = 35^\circ$, $\alpha = 76^\circ$, $S = 2.1 \text{ E}4$

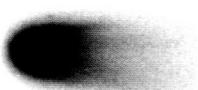


Figure 104. 1910 April 26.876; exposure 15 minutes; $r = 0.60$, $\Delta = 0.95$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 2.1 \text{ E}4$

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Figure 105-1. 1910 April 26.890; exposure 15 minutes; $r = 0.60$, $\Delta = 0.95$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 2.1$ E4

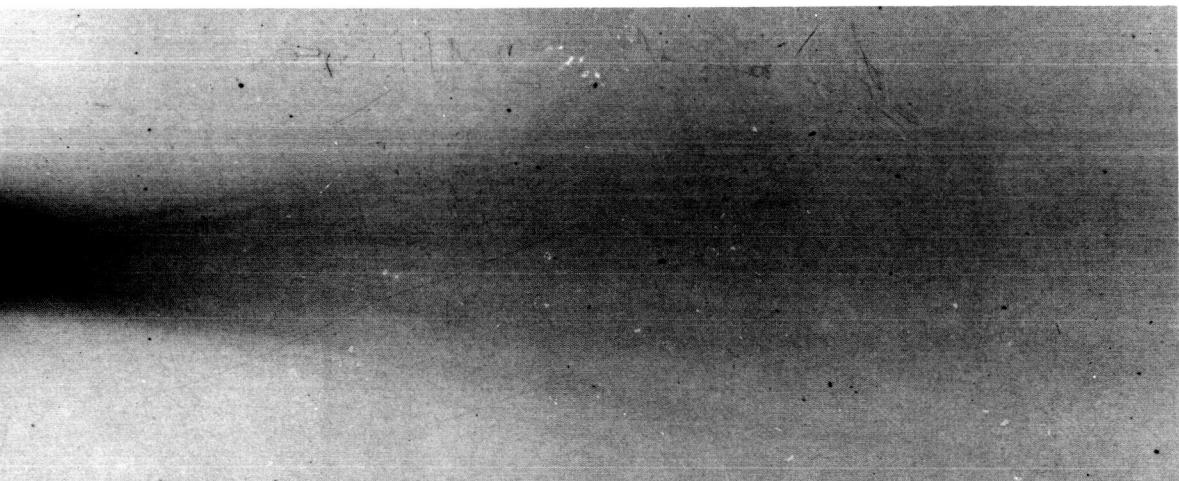


Figure 105-2. 1910 April 26.890; exposure 15 minutes; $r = 0.60$, $\Delta = 0.95$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 2.1$ E4

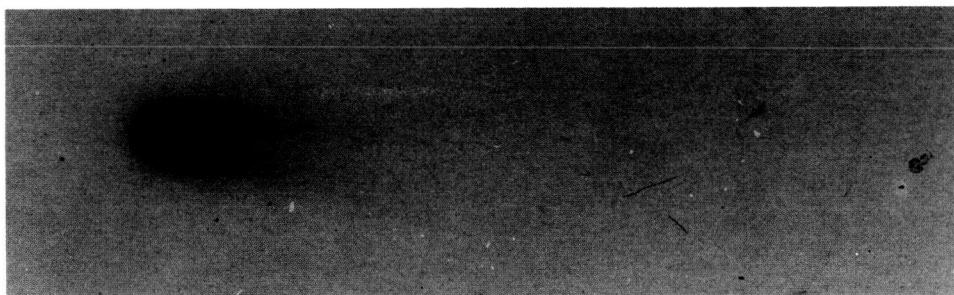


Figure 106a. 1910 April 26.897; exposure 2 minutes; $r = 0.60$, $\Delta = 0.95$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 2.1$ E4

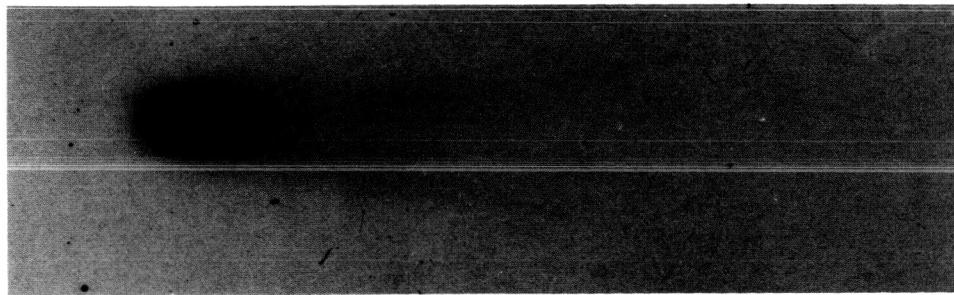


Figure 106b. 1910 April 26.899; exposure 3 minutes; $r = 0.60$, $\Delta = 0.95$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 2.1$ E4

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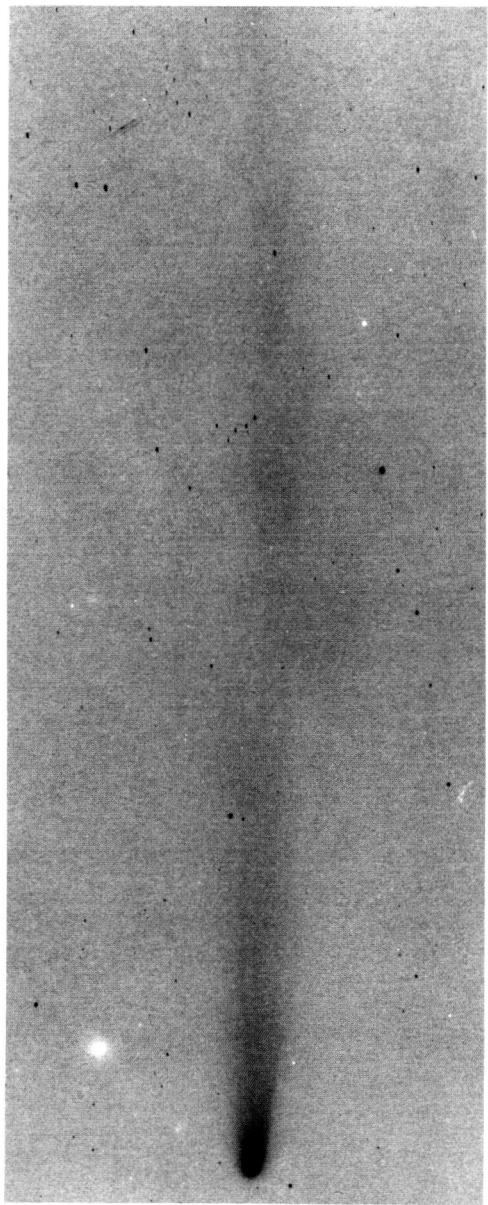


Figure 107-1. 1910 April 27.106; exposure 20 minutes; $r = 0.60$, $\Delta = 0.94$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 8.7 \text{ E}4$

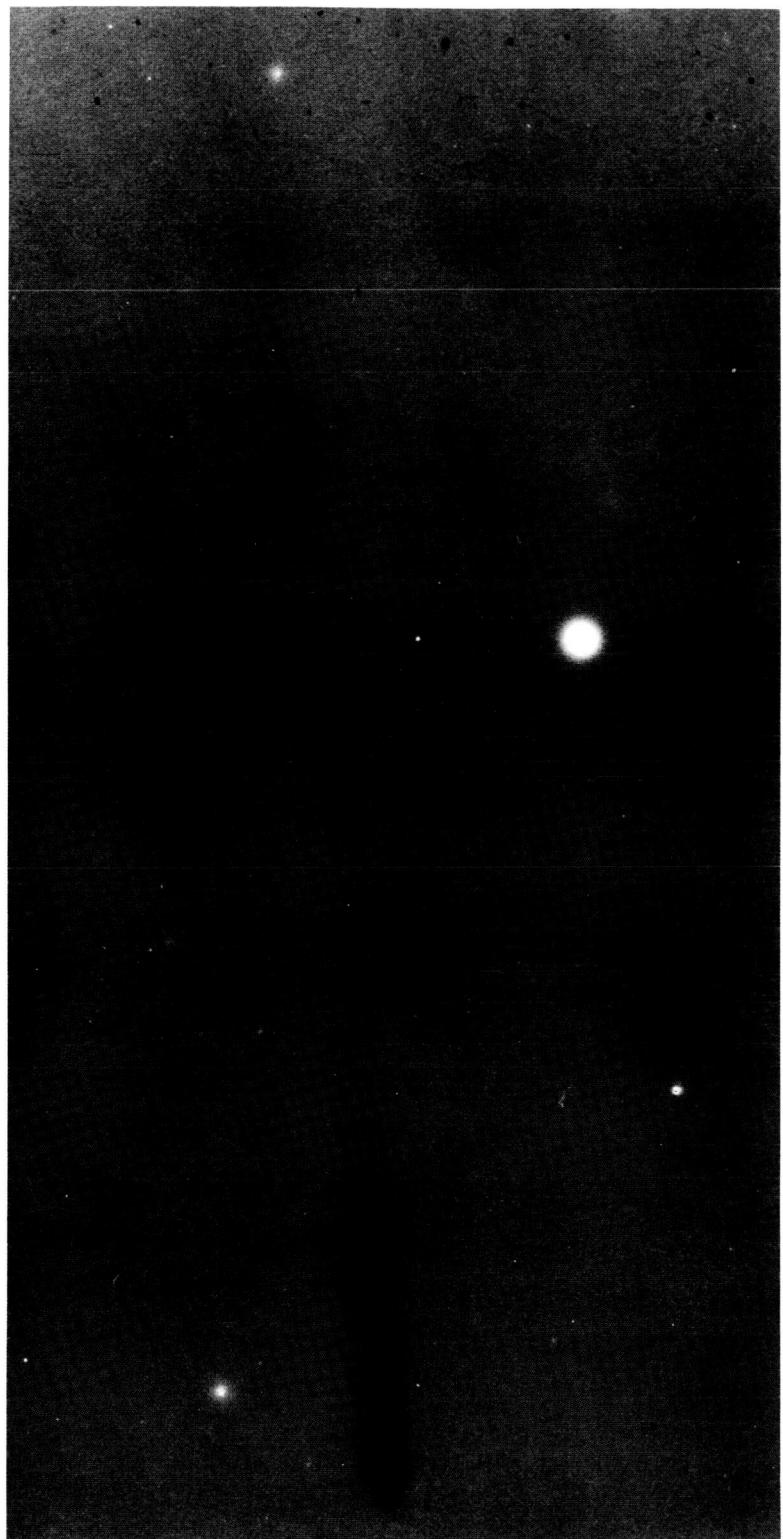


Figure 107-2. 1910 April 27.106; exposure 20 minutes; $r = 0.60$, $\Delta = 0.94$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 8.7 \text{ E}4$

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Figure 108-1. 1910 April 17.123; exposure 25 minutes; $r = 0.61$, $\Delta = 0.94$, $\theta = 36^\circ$,
 $\alpha = 77^\circ$, $S = 8.7 \text{ E}4$

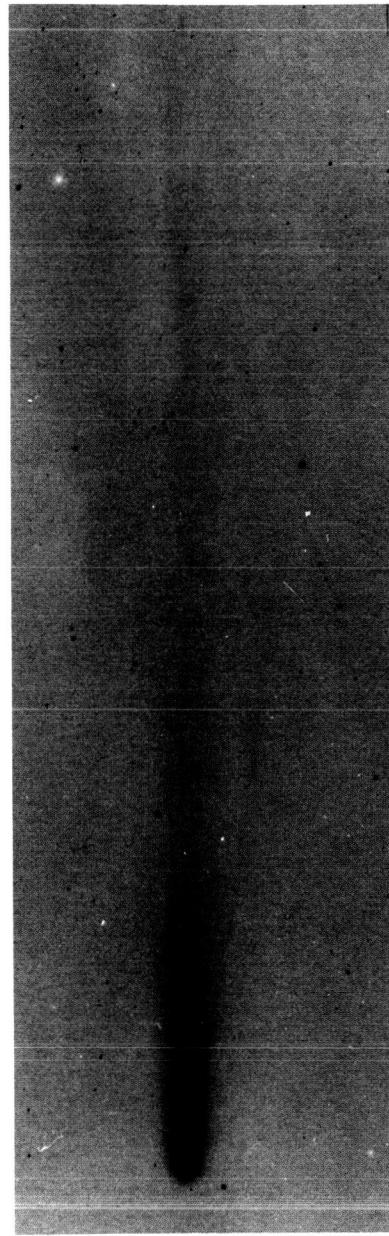


Figure 108-2. 1910 April 17.123; exposure 25 minutes; $r = 0.61$, $\Delta = 0.94$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 8.7 \text{ E}4$

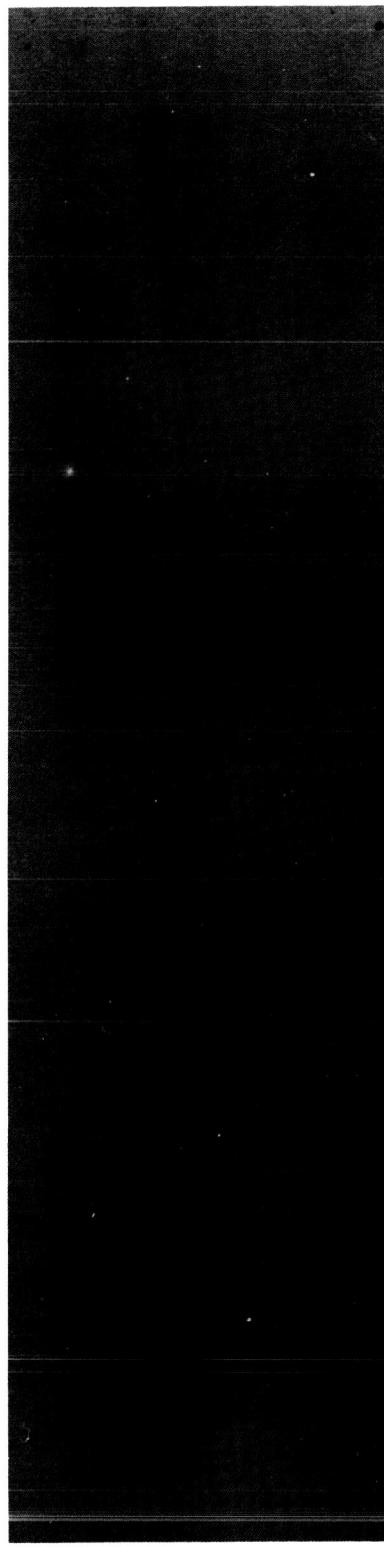


Figure 108-3. 1910 April 17.123; exposure 25 minutes; $r = 0.61$, $\Delta = 0.94$, $\theta = 36^\circ$, $\alpha = 77^\circ$, $S = 8.7 \text{ E}4$

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Figure 109-1. 1910 April 27.570; exposure 5 minutes; $r = 0.61$, $\Delta = 0.92$, $\theta = 36^\circ$, $\alpha = 79^\circ$,
 $S = 2.0 \text{ E}4$

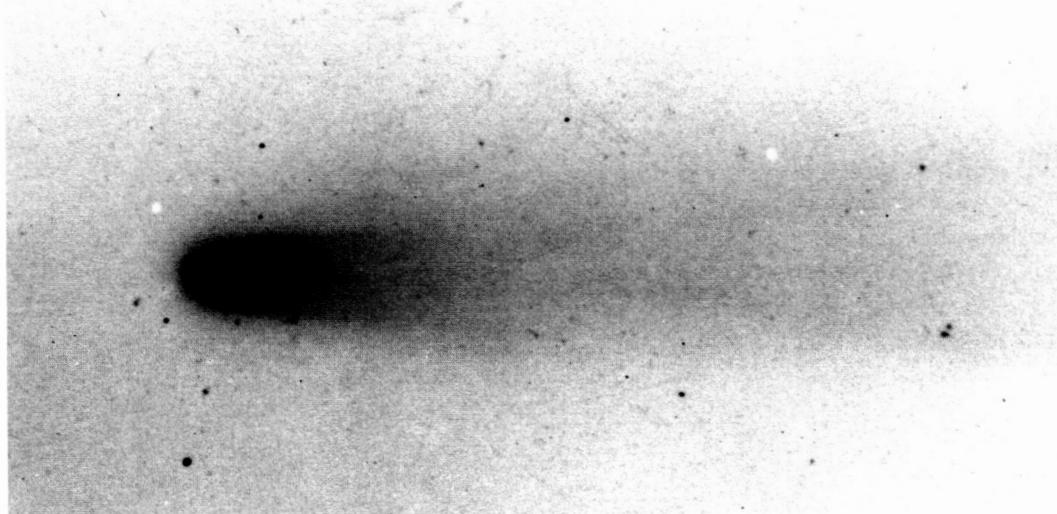


Figure 109-2. 1910 April 27.570; exposure 5, minutes; $r = 0.61$, $\Delta = 0.92$, $\theta = 36^\circ$, $\alpha = 79^\circ$,
 $S = 2.0 \text{ E}4$

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Figure 110-1. 1910 April 27.576; exposure 10 minutes; $r = 0.61$, $\Delta = 0.92$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0 \text{ E}4$



Figure 110-2. 1910 April 27.576; exposure 10 minutes; $r = 0.61$, $\Delta = 0.92$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0 \text{ E}4$

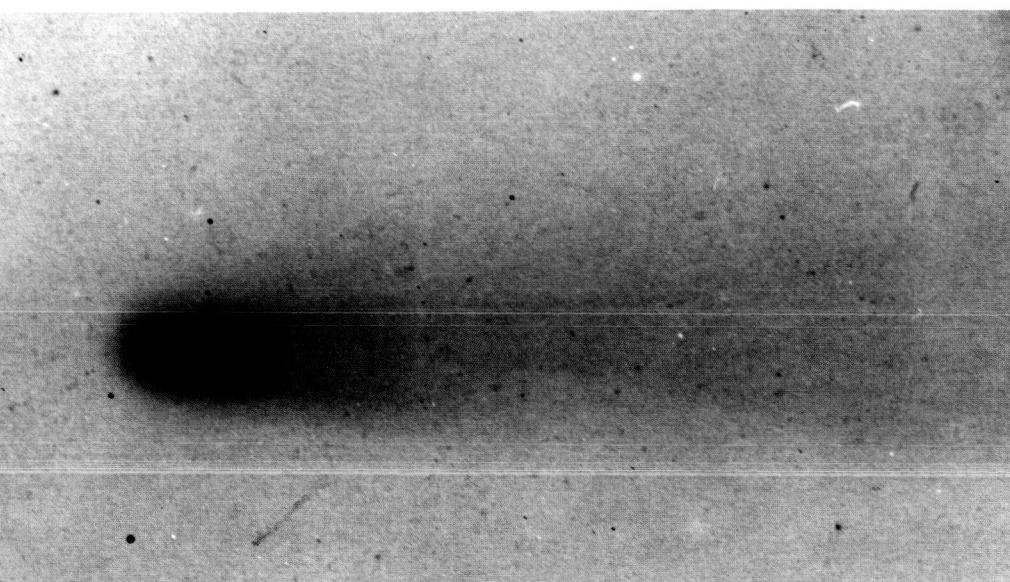


Figure 110-3. 1910 April 27.576; exposure 10 minutes; $r = 0.61$, $\Delta = 0.92$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0 \text{ E}4$

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Figure 111-1. 1910 April 27.584; exposure 3 minutes; $r = 0.61$, $\Delta = 0.92$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0$ E4

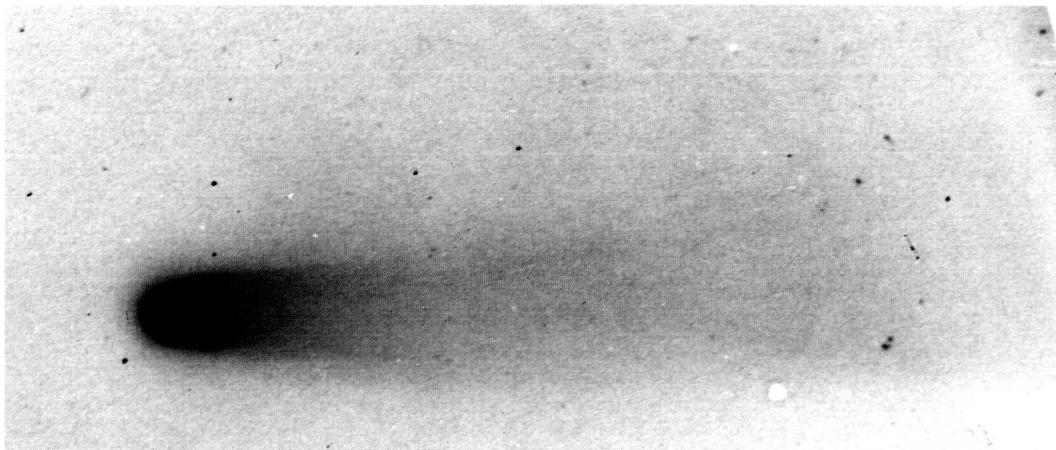


Figure 111-2. 1910 April 27.584; exposure 3 minutes; $r = 0.61$, $\Delta = 0.92$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0$ E4

Figure 112-1. 1910 April 27.588; exposure 5 minutes; $r = 0.61$, $\Delta = 0.92$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0$ E4

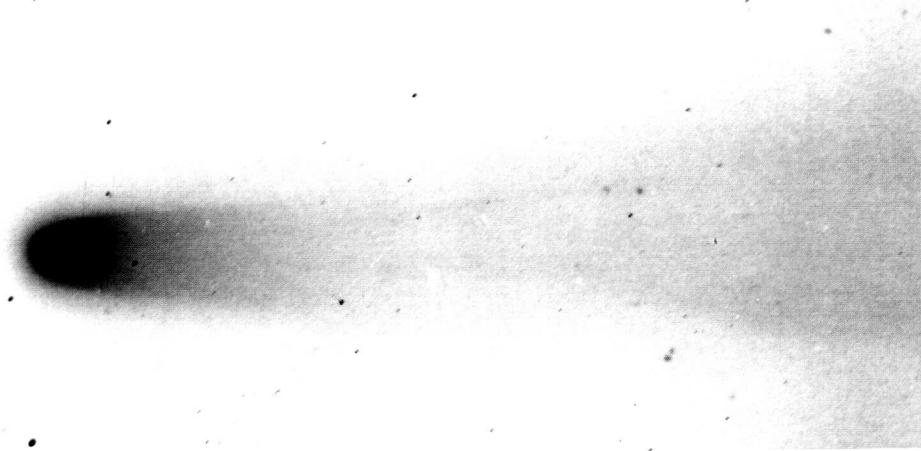


Figure 112-2. 1910 April 27.588; exposure 5 minutes; $r = 0.61$, $\Delta = 0.92$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0$ E4

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Figure 114-1. 1910 April 27.885; exposure 15 minutes; $r = 0.61$,
 $\Delta = 0.91$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0$ E4

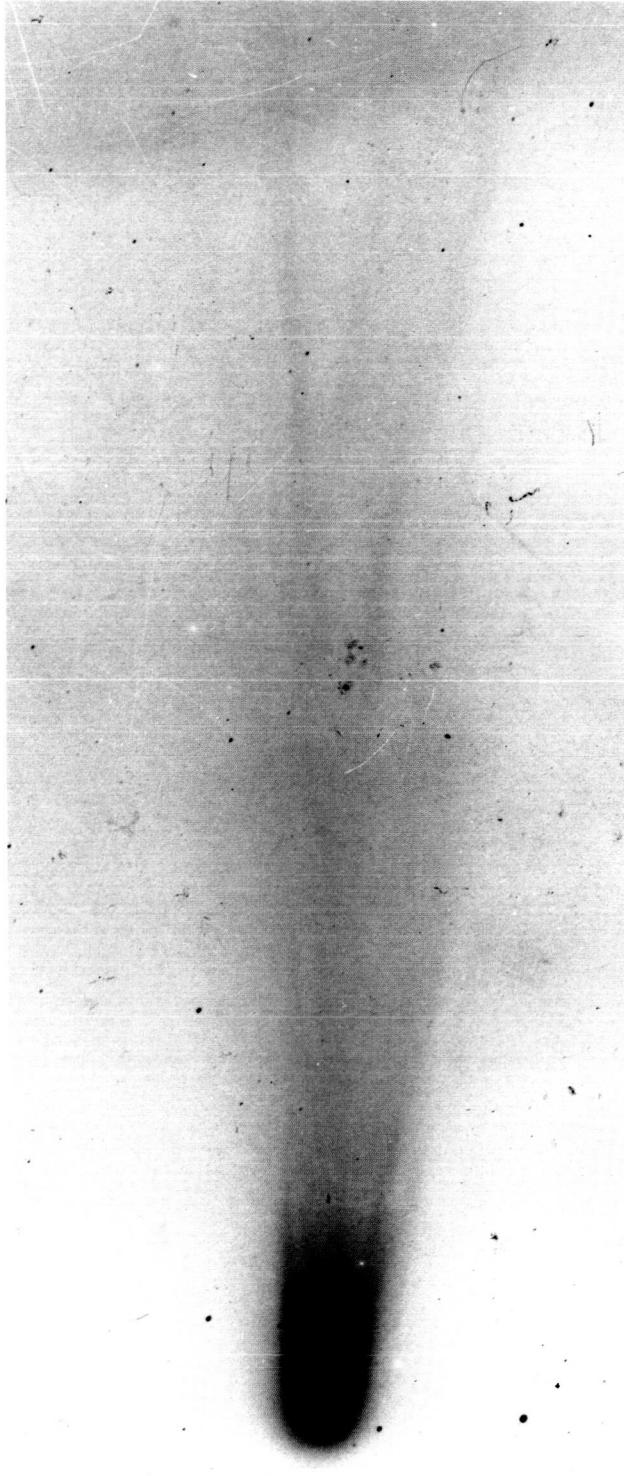


Figure 113. 1910 April 27.866; exposure 15 minutes; $r = 0.61$,
 $\Delta = 0.91$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0$ E4

Figure 114-2. 1910 April 27.885; exposure 15 minutes; $r = 0.61$, $\Delta = 0.91$, $\theta = 36^\circ$, $\alpha = 79^\circ$, $S = 2.0$ E4

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Figure 115a. 1910 April 27.910; exposure 3 minutes; $r = 0.61$, $\Delta = 0.91$, $\theta = 36^\circ$, $\alpha = 80^\circ$, $S = 2.0 \text{ E}4$

Figure 115b. 1910 April 27.903; exposure 4 minutes; $r = 0.61$, $\Delta = 0.91$, $\theta = 36^\circ$, $\alpha = 80^\circ$, $S = 2.0 \text{ E}4$

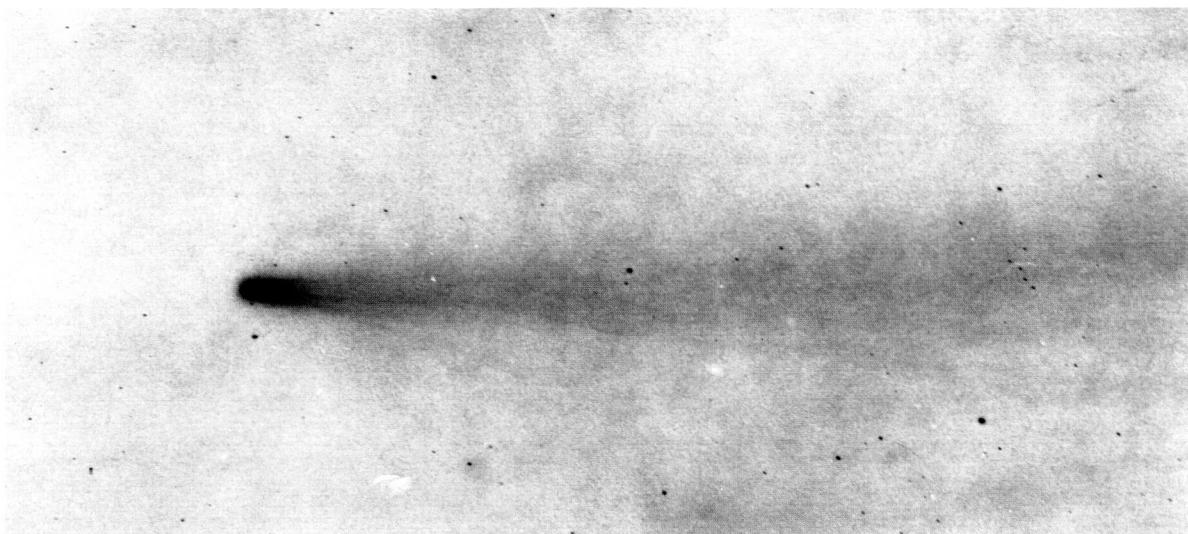


Figure 116. 1910 April 28.122; exposure 26 minutes; $r = 0.61$, $\Delta = 0.90$, $\theta = 37^\circ$, $\alpha = 80^\circ$, $S = 8.4 \text{ E}4$

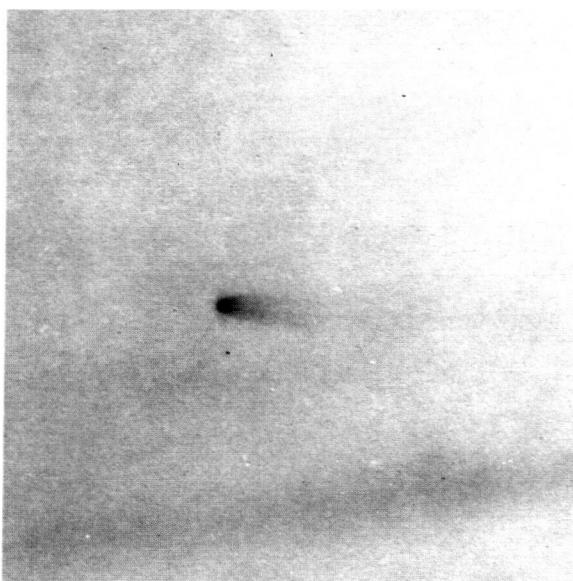


Figure 117. 1910 April 28.136; exposure 9 minutes; $r = 0.61$, $\Delta = 0.90$, $\theta = 37^\circ$, $\alpha = 80^\circ$, $S = 8.4 \text{ E}4$

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Figure 118. 1910 April 28.471; exposure 36 minutes; $r = 0.61$, $\Delta = 0.89$, $\theta = 37^\circ$,
 $\alpha = 81^\circ$, $S = 3.6$ E4

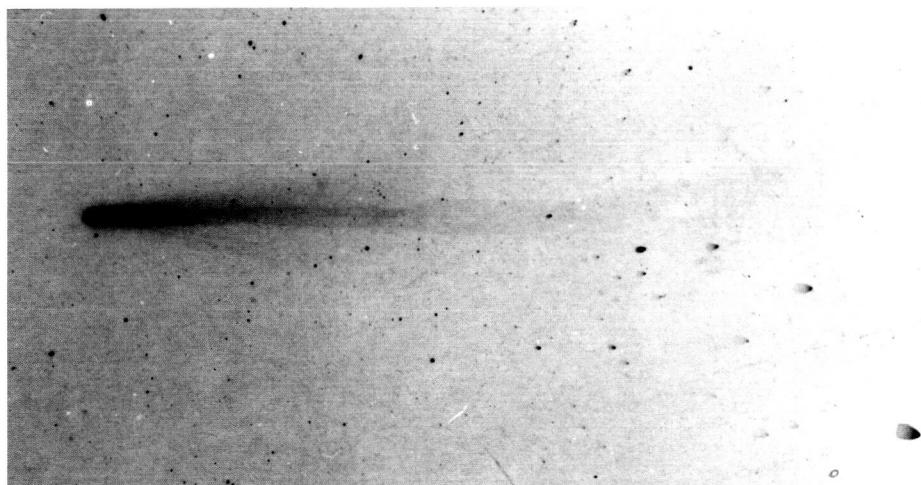


Figure 119. 1910 April 28.472; exposure 51 minutes; $r = 0.61$, $\Delta = 0.89$, $\theta = 37^\circ$,
 $\alpha = 81^\circ$, $S = 2.3$ E4

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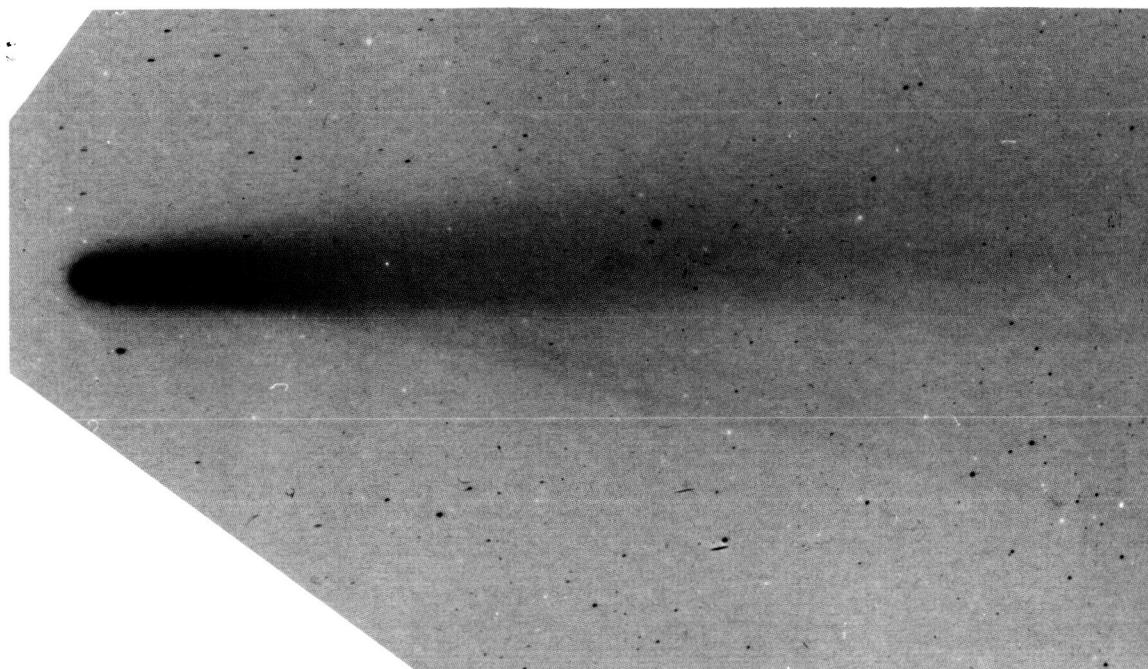


Figure 120. 1910 April 28.622; exposure 50 minutes; $r = 0.61$, $\Delta = 0.88$, $\theta = 37^\circ$, $\alpha = 82^\circ$,

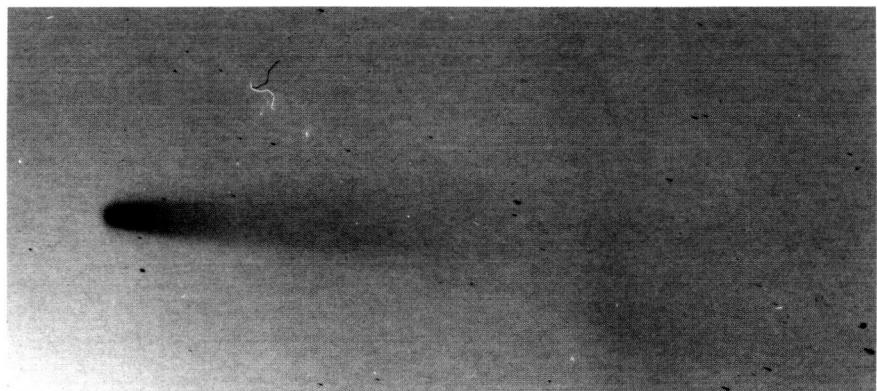


Figure 121. 1910 April 28.904; exposure 79 minutes; $r = 0.62$, $\Delta = 0.87$,
 $\theta = 37^\circ$, $\alpha = 82^\circ$, $S = 8.9$ E4

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S = 5.8 E4

Figure 122. 1910 April 28.318; exposure 45 minutes; $r = 0.61$, $\Delta = 0.89$, $\theta = 37^\circ$, $\alpha = 81^\circ$, S = 1.9 E4

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Figure 123-1. 1910 April 28.572; exposure 5 minutes; $r = 0.61$,
 $\Delta = 0.88$, $\theta = 37^\circ$, $\alpha = 81^\circ$, $S = 1.9 \text{ E}4$



Figure 123-2. 1910 April 28.572; exposure 5 minutes; $r = 0.61$, $\Delta = 0.88$, $\theta = 37^\circ$,
 $\alpha = 81^\circ$, $S = 1.9 \text{ E}4$

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Figure 124-1. 1910 April 28.580; exposure 10 minutes; $r = 0.61$,
 $\Delta = 0.88$, $\theta = 37^\circ$, $\alpha = 81^\circ$, S = 1.9 E4

Figure 124-2. 1910 April 28.580; exposure 10 minutes; $r = 0.61$,
 $\Delta = 0.88$, $\theta = 37^\circ$, $\alpha = 81^\circ$, S = 1.9 E4

Figure 124-3. 1910 April 28.580; exposure 10 minutes; $r = 0.61$, $\Delta = 0.88$, $\theta = 37^\circ$, $\alpha = 81^\circ$,
S = 1.9 E4

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Figure 125-1. 1910 April 28.591; exposure 4 minutes; $r = 0.61$, $\Delta = 0.88$,
 $\theta = 37^\circ$, $\alpha = 82^\circ$, $S = 1.9$ E4

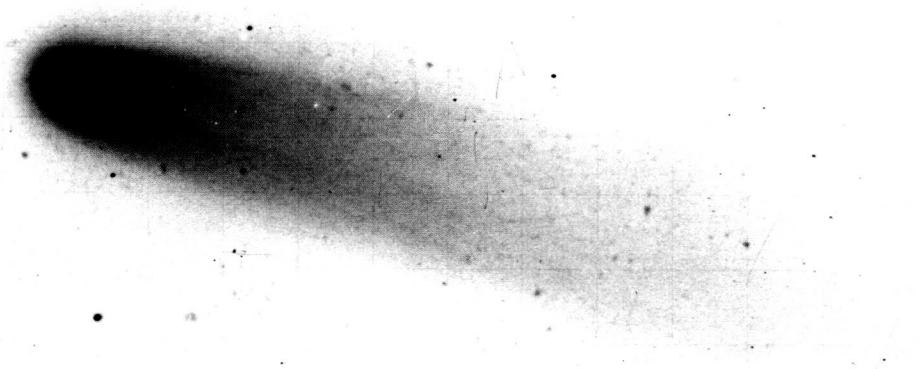


Figure 125-2. 1910 April 28.591; exposure 4 minutes; $r = 0.61$, $\Delta = 0.88$, $\theta = 37^\circ$,
 $\alpha = 82^\circ$, $S = 1.9$ E4

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Figure 126-1. 1910 April 28.995; exposure 30 minutes;
 $r = 0.62$, $\Delta = 0.87$, $\theta = 37^\circ$, $\alpha = 83^\circ$, $S = 1.5 E4$

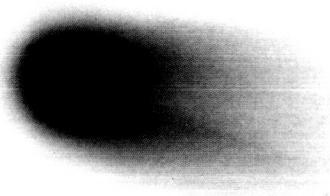


Figure 126-2. 1910 April 28.995; exposure 30 minutes;
 $r = 0.62$, $\Delta = 0.87$, $\theta = 37^\circ$, $\alpha = 83^\circ$, $S = 1.5 E4$

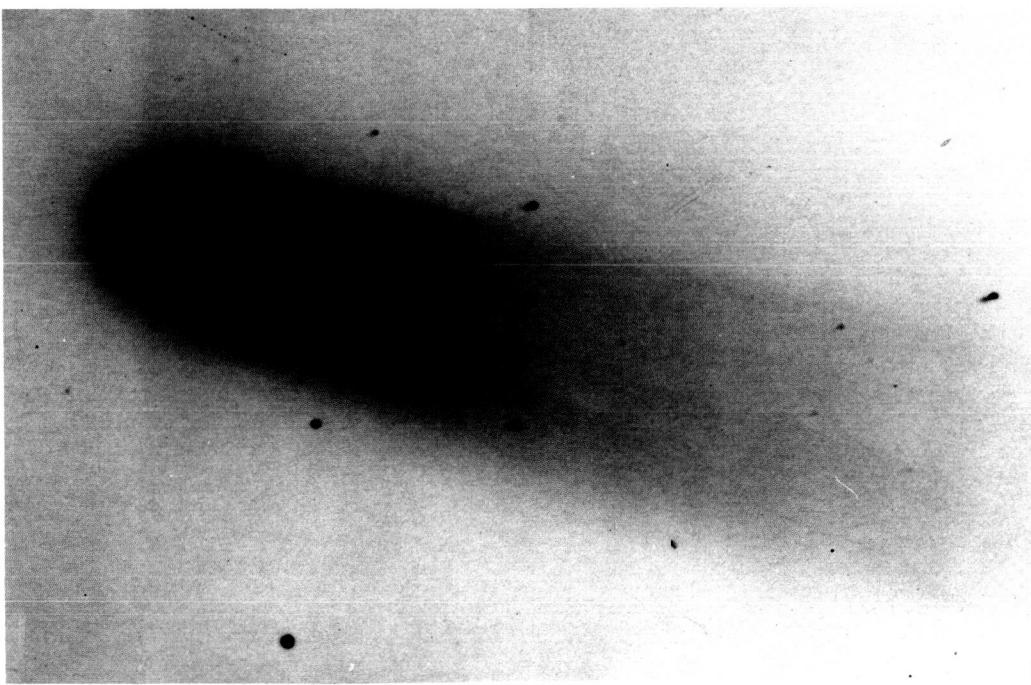


Figure 126-3. 1910 April 28.995; exposure 30 minutes; $r = 0.62$, $\Delta = 0.87$, $\theta = 37^\circ$, $\alpha = 83^\circ$, $S = 1.5 E4$

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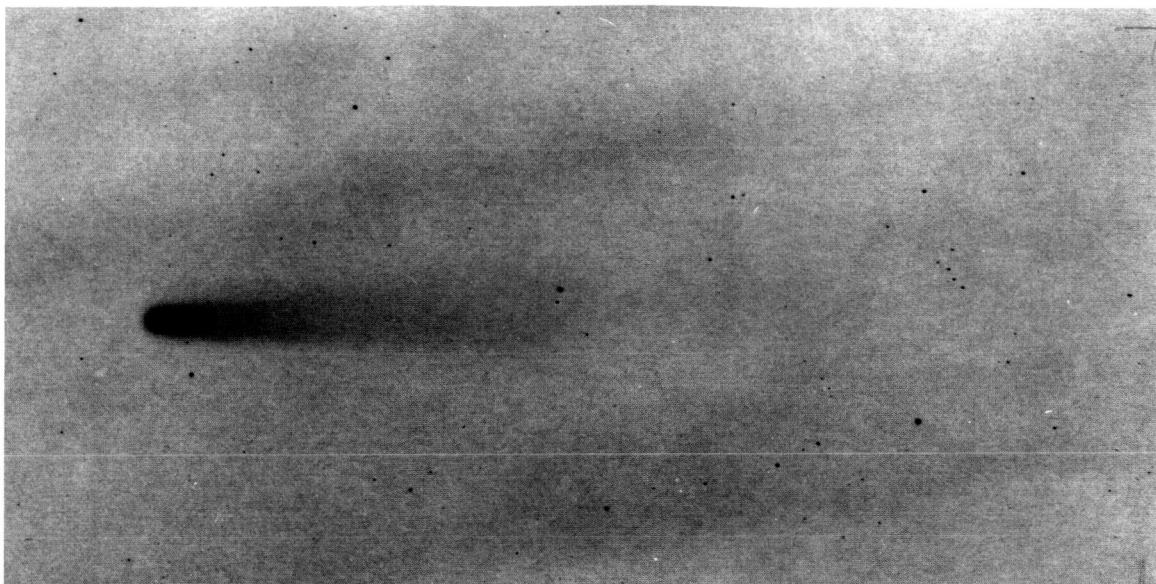


Figure 127. 1910 April 29.107; exposure 18 minutes; $r = 0.62$, $\Delta = 0.86$, $\theta = 37^\circ$, $\alpha = 83^\circ$, S = 8.0 E4



Figure 128. 1910 April 29.122; exposure 7.50 minutes; $r = 0.62$, $\Delta = 0.86$, $\theta = 37^\circ$, $\alpha = 83^\circ$, S = 8.0 E4

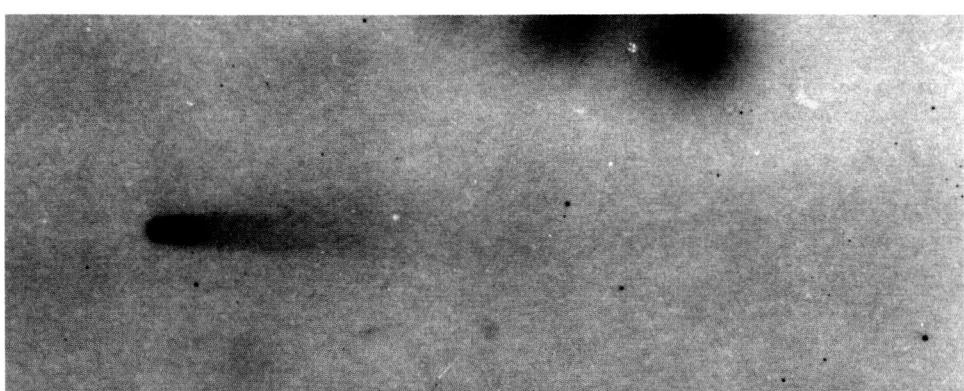


Figure 129. 1910 April 29.133; exposure 8 minutes; $r = 0.62$, $\Delta = 0.86$, $\theta = 37^\circ$, $\alpha = 83^\circ$, S = 8.0 E4

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Figure 130. 1910 April 29.310; exposure 68 minutes; $r = 0.62$, $\Delta = 0.85$, $\theta = 38^\circ$, $\alpha = 84^\circ$, $S = 6.0 \text{ E}4$



Figure 131. 1910 April 29.467; exposure 48 minutes; $r = 0.62$, $\Delta = 0.85$,
 $\theta = 38^\circ$, $\alpha = 84^\circ$, $S = 3.4 \text{ E}4$

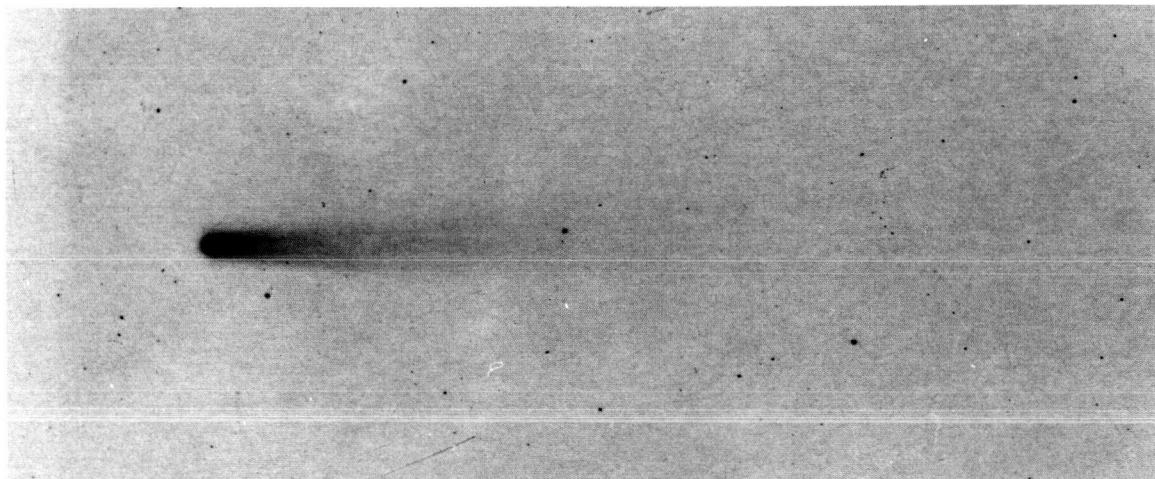


Figure 132. 1910 April 29.894; exposure 15 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$, $\alpha = 85^\circ$, $S = 9.8 \text{ E}4$

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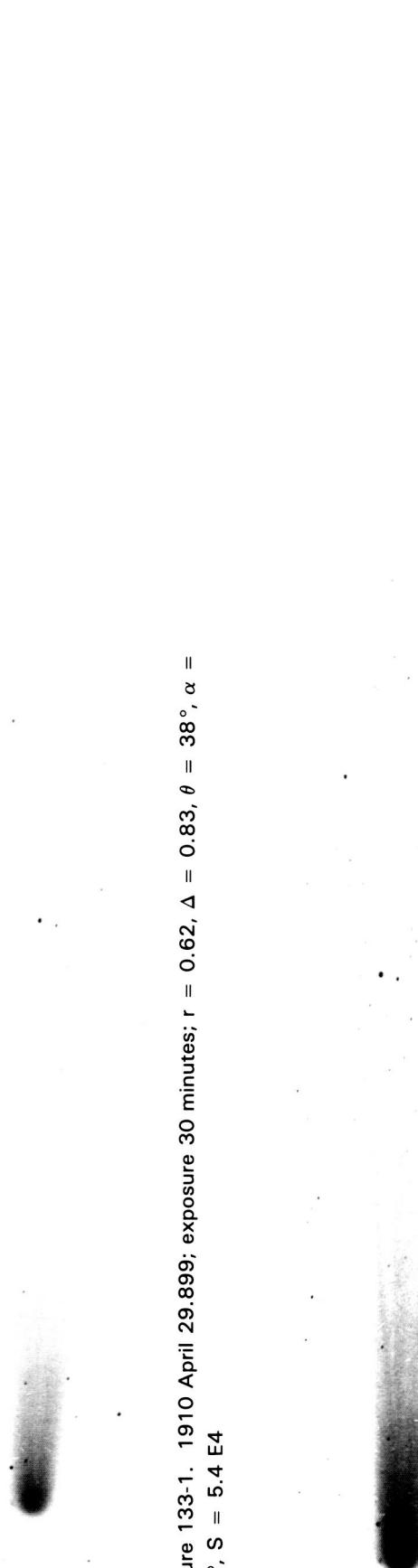


Figure 133-1. 1910 April 29.899; exposure 30 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$, $\alpha = 85^\circ$, $S = 5.4$ E4



Figure 133-2. 1910 April 29.899; exposure 30 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$, $\alpha = 85^\circ$, $S = 5.4$ E4

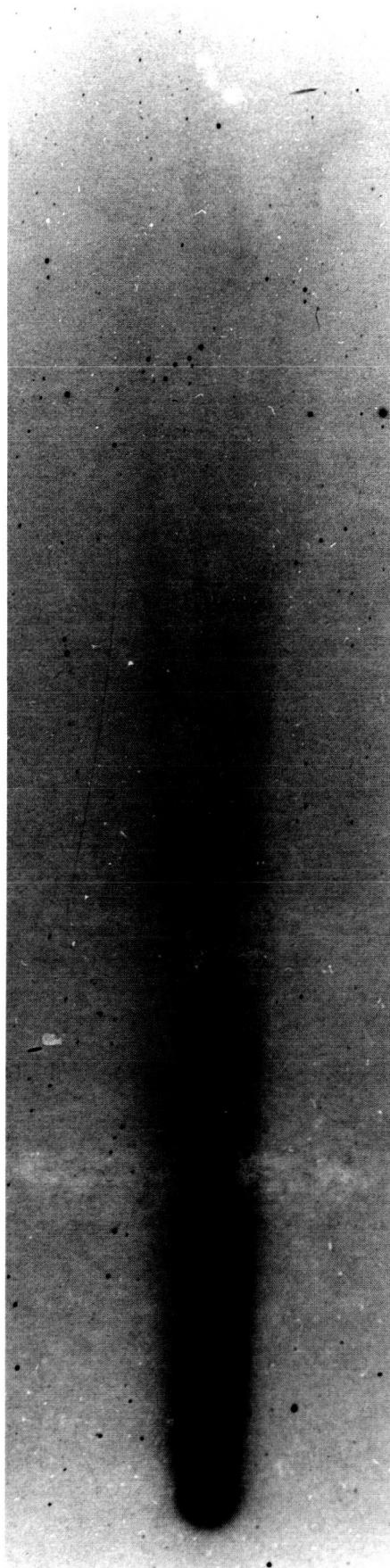


Figure 133-3. 1910 April 29.899; exposure 30 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$, $\alpha = 85^\circ$, $S = 5.4$ E4

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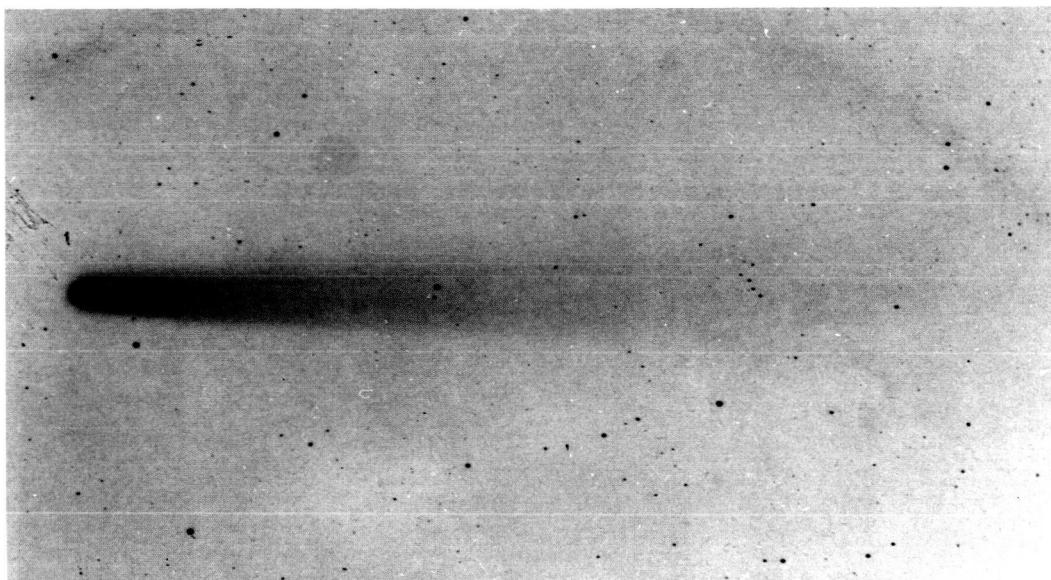


Figure 134. 1910 April 29.904; exposure 5 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$, $\alpha = 85^\circ$,
 $S = 9.8$ E4



Figure 135. 1910 April 29.917; exposure
.. minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$,
 $\alpha = 85^\circ$, $S = 6.2$ E4

Figure 136. 1910 April 29.957; exposure 26 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$, $\alpha = 85^\circ$,
 $S = 7.0$ E4

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Figure 137-1. 1910 April 29.010; exposure 10 minutes; $r = 0.62$, $\Delta = 0.87$, $\theta = 37^\circ$, $\alpha = 83^\circ$, $S = 1.2$ E4

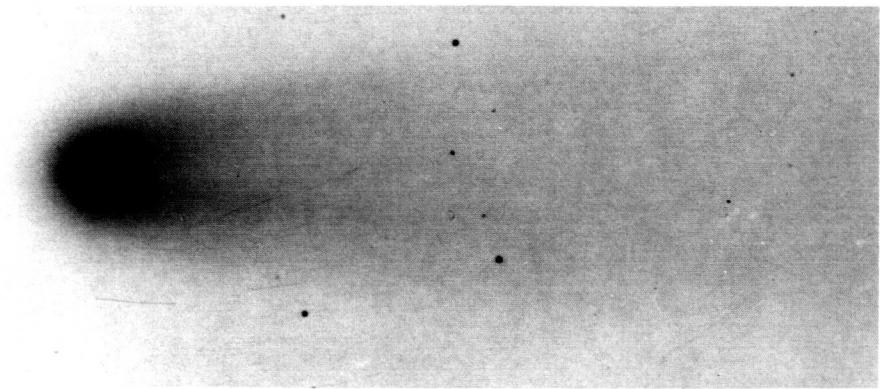


Figure 137-2. 1910 April 29.010; exposure 10 minutes; $r = 0.62$, $\Delta = 0.87$, $\theta = 37^\circ$, $\alpha = 83^\circ$, $S = 1.2$ E4

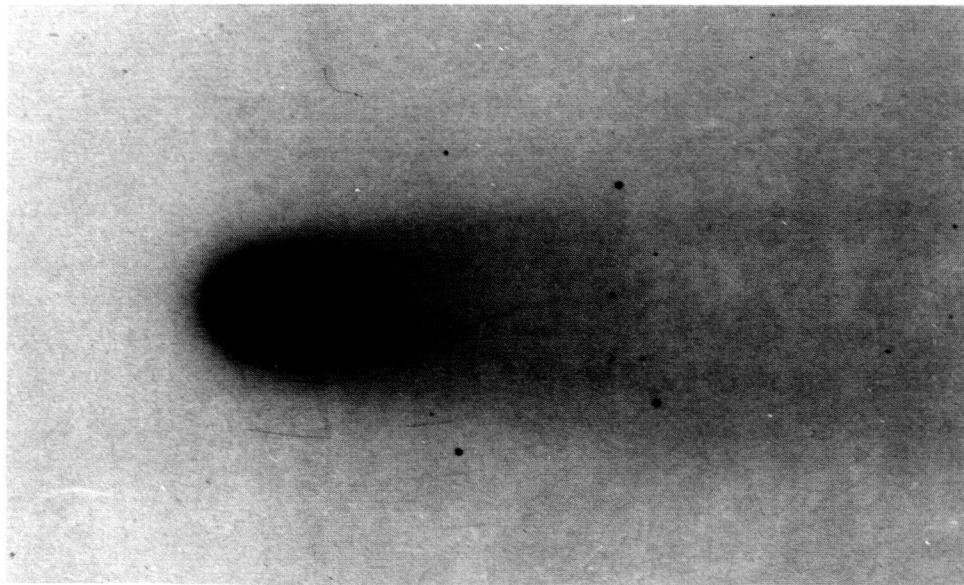


Figure 137-3. 1910 April 29.010; exposure 10 minutes; $r = 0.62$, $\Delta = 0.87$, $\theta = 37^\circ$, $\alpha = 83^\circ$, $S = 1.2$ E4

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Figure 138-1. 1910 April 29.901; exposure 15 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$,
 $\alpha = 85^\circ$, $S = 1.8 E4$

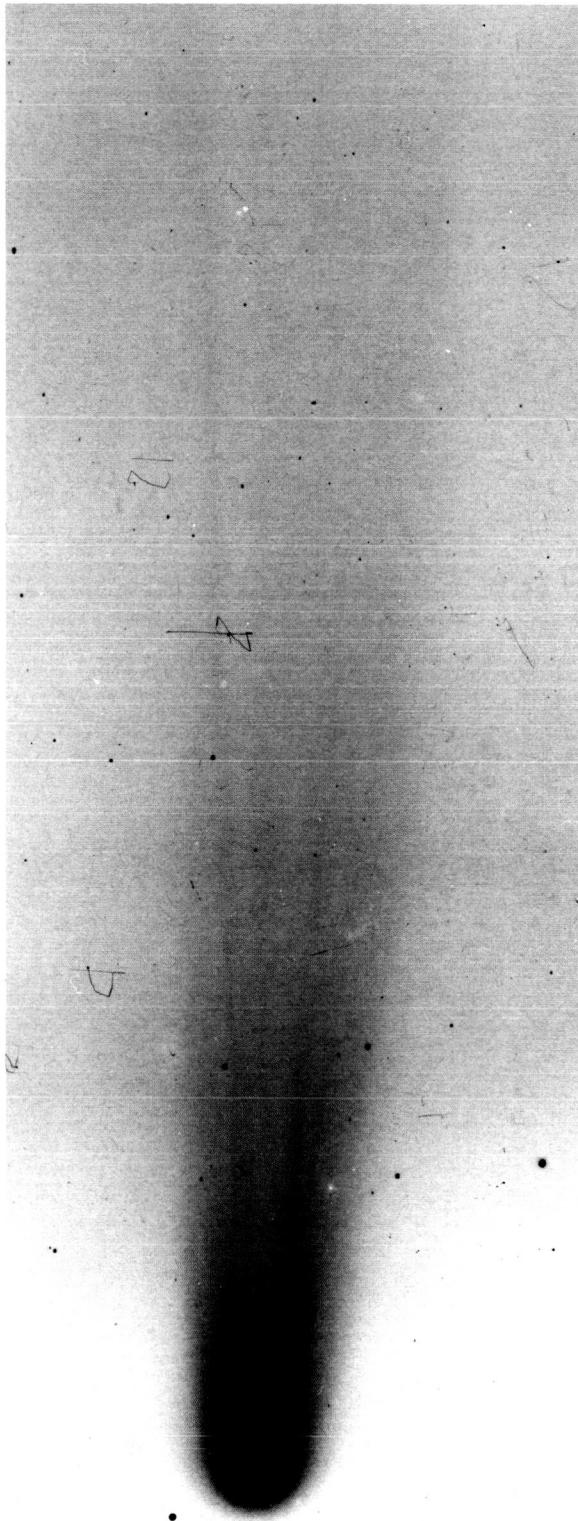


Figure 138-2. 1910 April 29.901; exposure 15 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$, $\alpha = 85^\circ$, $S = 1.8 E4$

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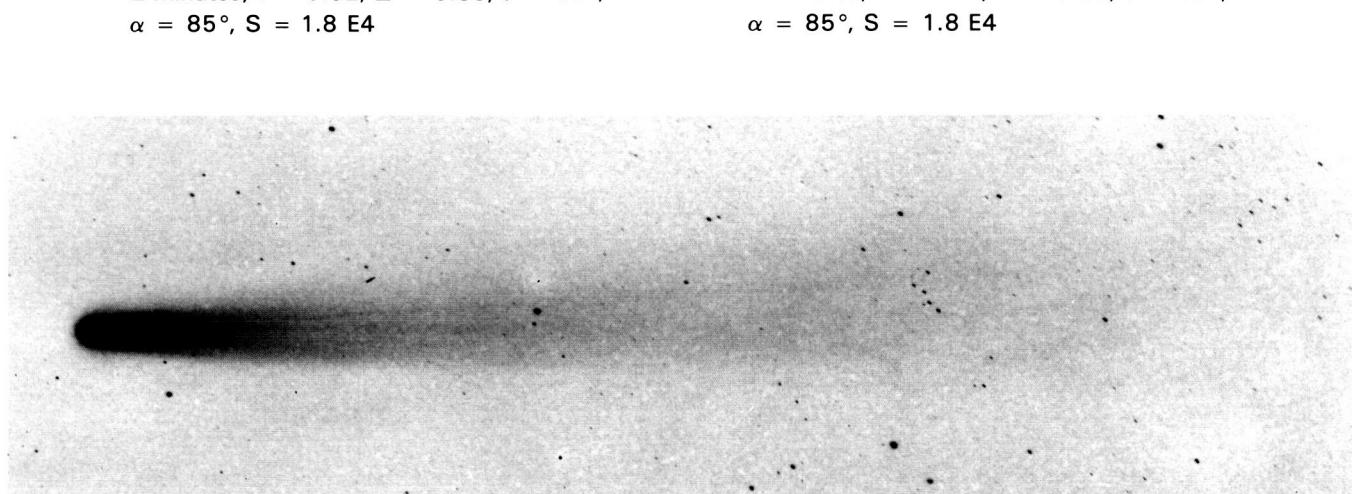


Figure 139a. 1910 April 29.912; exposure 2 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$, $\alpha = 85^\circ$, $S = 1.8$ E4

Figure 139b. 1910 April 29.916; exposure 3 minutes; $r = 0.62$, $\Delta = 0.83$, $\theta = 38^\circ$, $\alpha = 85^\circ$, $S = 1.8$ E4

Figure 140. 1910 April 30.117; exposure 35 minutes; $r = 0.63$, $\Delta = 0.82$, $\theta = 38^\circ$, $\alpha = 86^\circ$, $S = 7.6$ E4

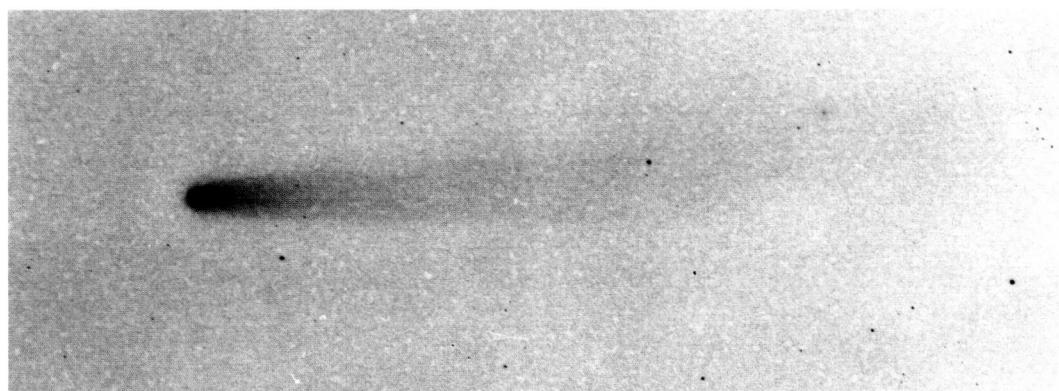


Figure 141. 1910 April 30.133; exposure 5 minutes; $r = 0.63$, $\Delta = 0.82$, $\theta = 38^\circ$, $\alpha = 86^\circ$, $S = 7.6$ E4

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Figure 142. 1910 April 30.311; exposure 40 minutes; $r = 0.63$, $\Delta = 0.81$, $\theta = 38^\circ$, $\alpha = 86^\circ$, $S = 5.7$ E4

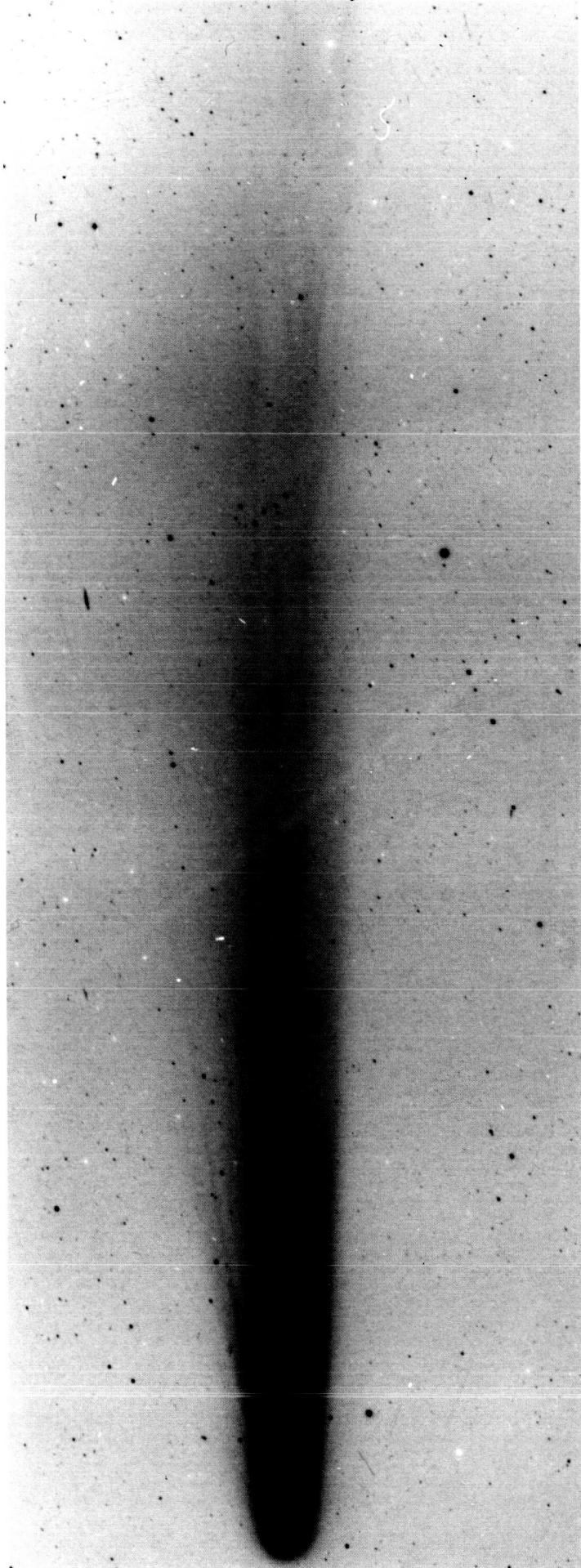


Figure 143. 1910 April 30.627; exposure 30 minutes; $r = 0.63$, $\Delta = 0.80$, $\theta = 39^\circ$, $\alpha = 87^\circ$, $S = 5.3$ E4

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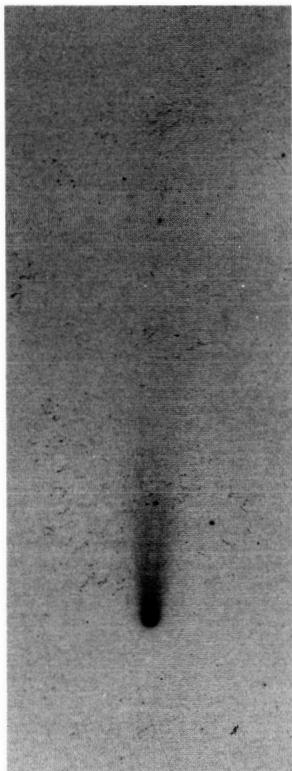


Figure 144. 1910 April 30.883; exposure 4 minutes; $r = 0.63$, $\Delta = 0.79$, $\theta = 39^\circ$, $\alpha = 88^\circ$, $S = 9.3$ E4

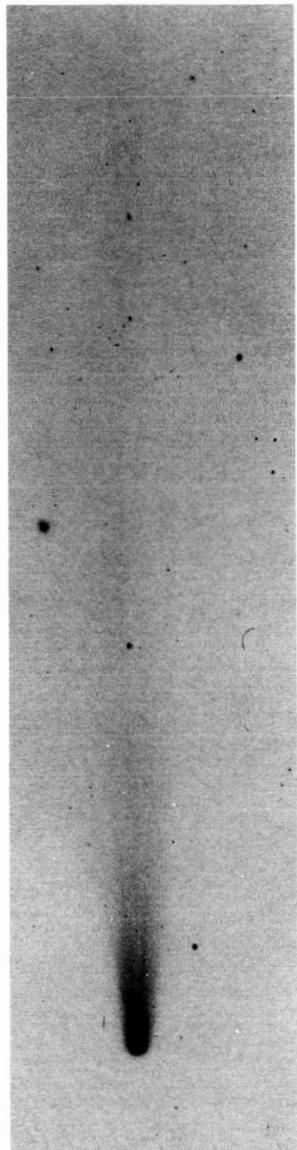


Figure 145. 1910 April 30.895; exposure 9 minutes; $r = 0.63$, $\Delta = 0.79$, $\theta = 39^\circ$, $\alpha = 88^\circ$, $S = 9.3$ E4



Figure 146. 1910 April 30.963; exposure 43 minutes; $r = 0.63$, $\Delta = 0.79$, $\theta = 39^\circ$, $\alpha = 88^\circ$, $S = 6.7$ E4

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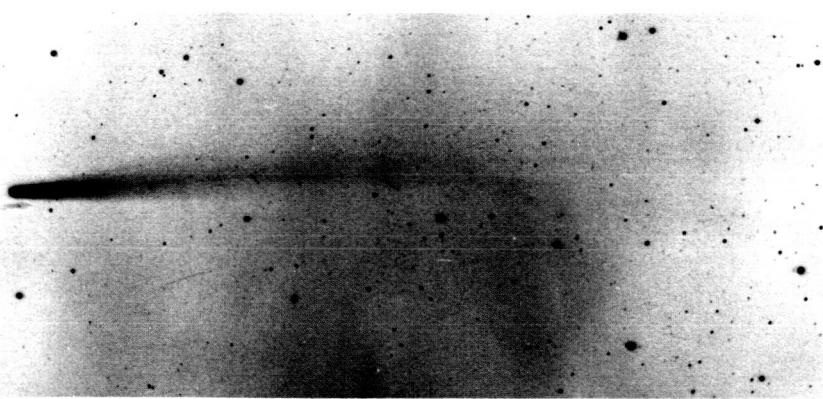


Figure 147. 1910 April 30.963; exposure 25 minutes; $r = 0.63$, $\Delta = 0.79$, $\theta = 39^\circ$, $\alpha = 88^\circ$, $S = 2.9$ E5



Figure 148. 1910 April 30.572; exposure 8 minutes; $r = 0.63$, $\Delta = 0.80$, $\theta = 38^\circ$, $\alpha = 87^\circ$, $S = 1.8$ E4



Figure 149. 1910 April 30.983; exposure 34 minutes; $r = 0.63$, $\Delta = 0.79$, $\theta = 39^\circ$, $\alpha = 88^\circ$, $S = 1.1$ E4

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Figure 150. 1910 May 1.113; exposure 15 minutes; $r = 0.63$, $\Delta = 0.78$, $\theta = 39^\circ$, $\alpha = 89^\circ$, $S = 7.3$ E4

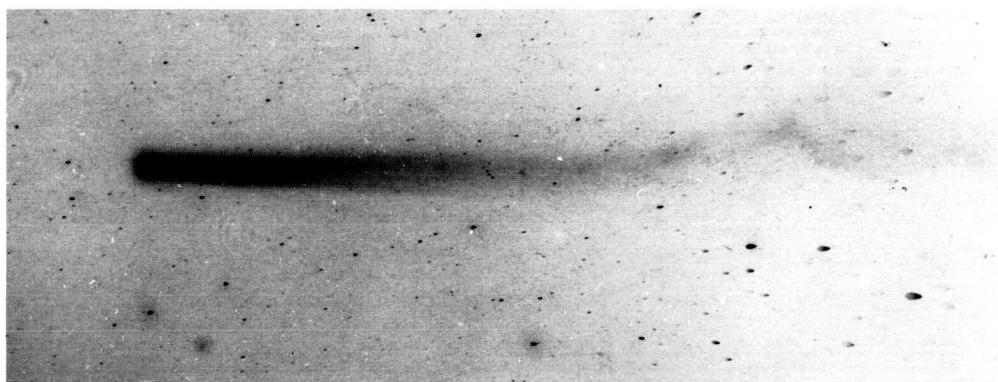


Figure 151. 1910 May 1.471; exposure 53 minutes; $r = 0.64$, $\Delta = 0.77$, $\theta = 39^\circ$, $\alpha = 90^\circ$, $S = 2.0$ E5

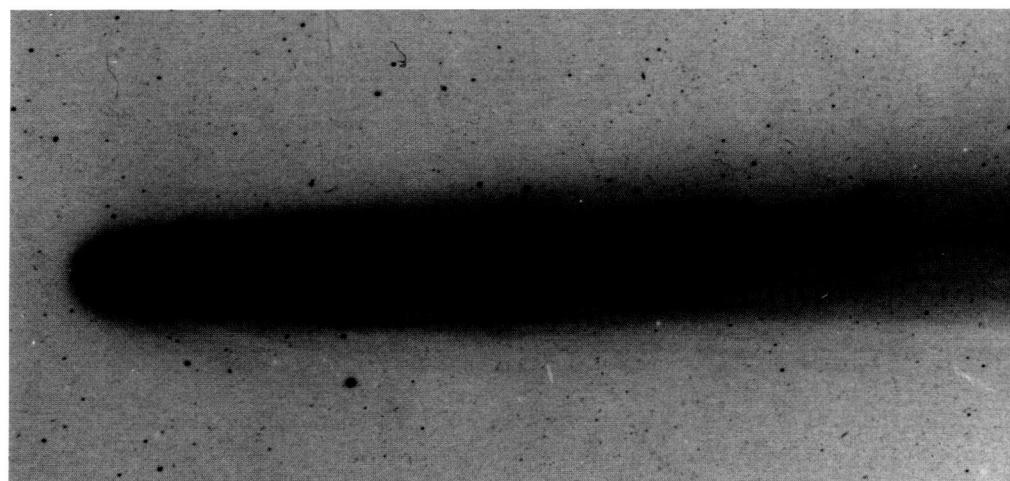


Figure 152. 1910 May 1.625; exposure 31 minutes; $r = 0.64$, $\Delta = 0.76$, $\theta = 39^\circ$,

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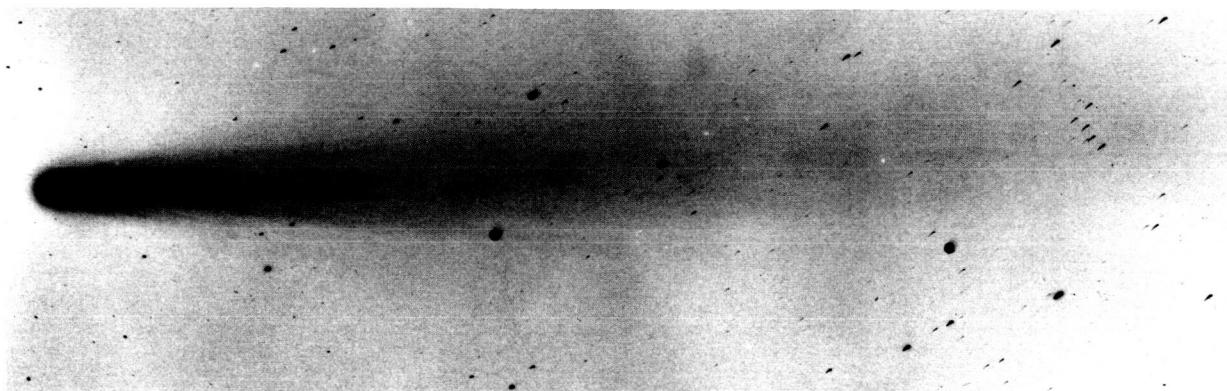


Figure 153. 1910 May 1.963; exposure 43 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 6.4 \text{ E}4$



Figure 154. 1910 May 1.003; exposure 20 minutes; $r = 0.63$, $\Delta = 0.79$, $\theta = 39^\circ$, $\alpha = 88^\circ$, $S = 1.1 \text{ E}4$

$\alpha = 90^\circ$, $S = 5.0 \text{ E}4$

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Figure 155-1. 1910 May 1.585; exposure 10 minutes; $r = 0.64$, $\Delta = 0.77$, $\theta = 39^\circ$, $\alpha = 90^\circ$, $S = 1.7 \text{ E}4$

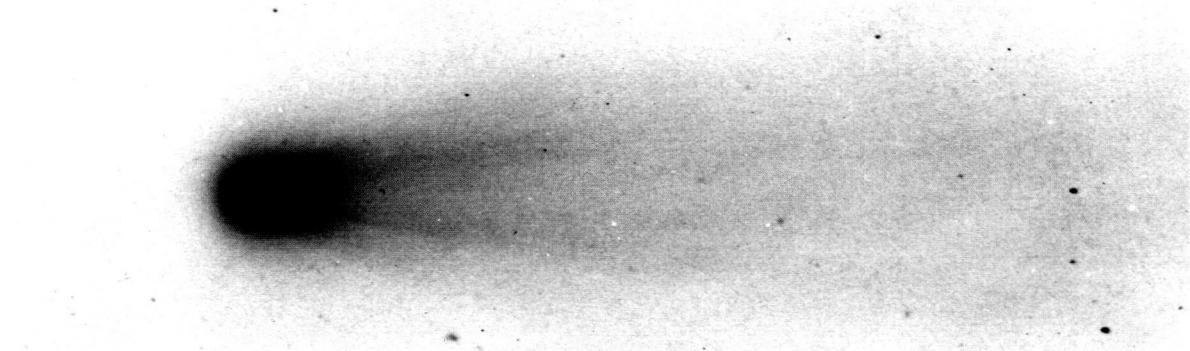


Figure 155-2. 1910 May 1.585; exposure 10 minutes; $r = 0.64$, $\Delta = 0.77$, $\theta = 39^\circ$, $\alpha = 90^\circ$, $S = 1.7 \text{ E}4$

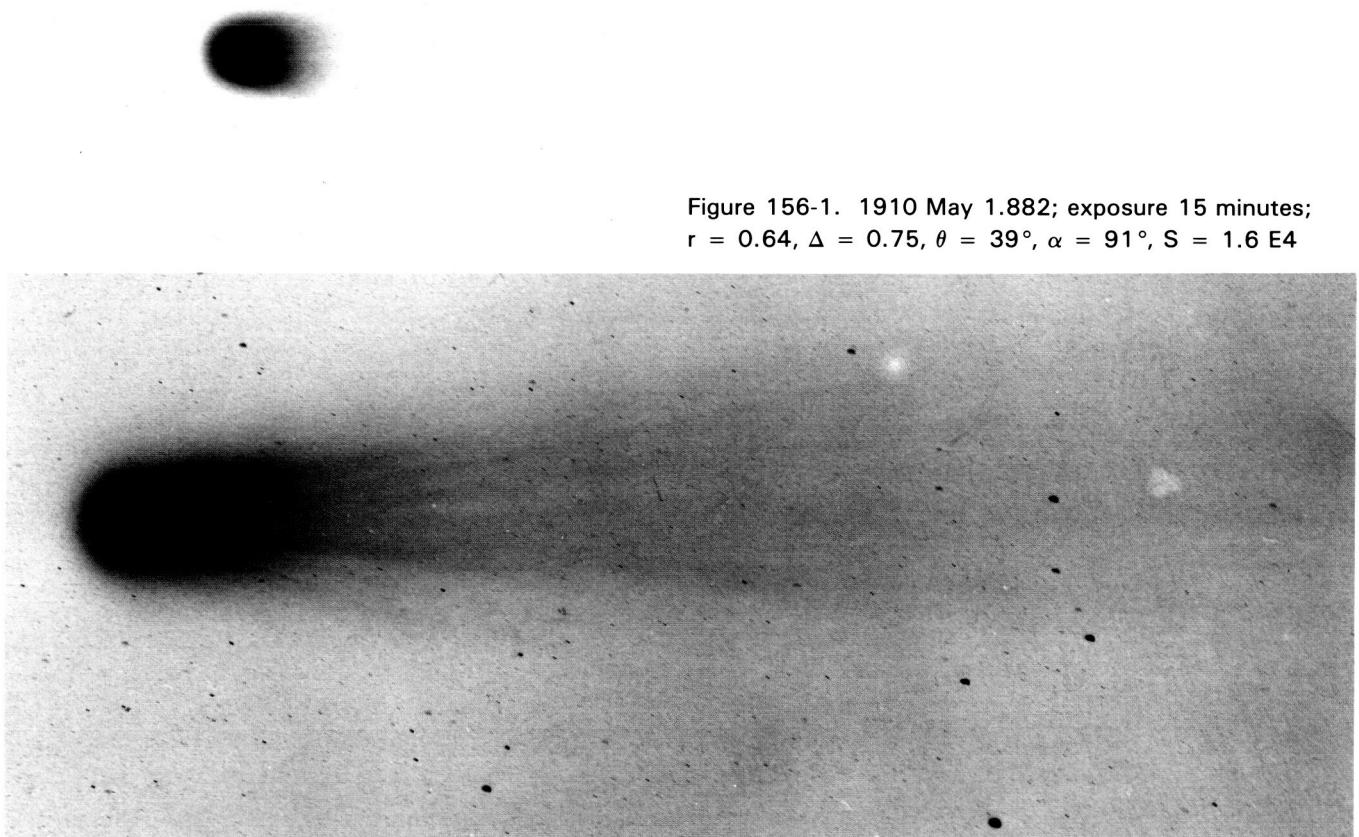


Figure 156-1. 1910 May 1.882; exposure 15 minutes;
 $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.6 \text{ E}4$

Figure 156-2. 1910 May 1.882; exposure 15 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.6 \text{ E}4$

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Figure 157a. 1910 May 1.906; exposure 2 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.6 \text{ E}4$

Figure 157b. 1910 May 1.901; exposure 3 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.6 \text{ E}4$

Figure 158-1. 1910 May 1.913; exposure 9 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.6 \text{ E}4$

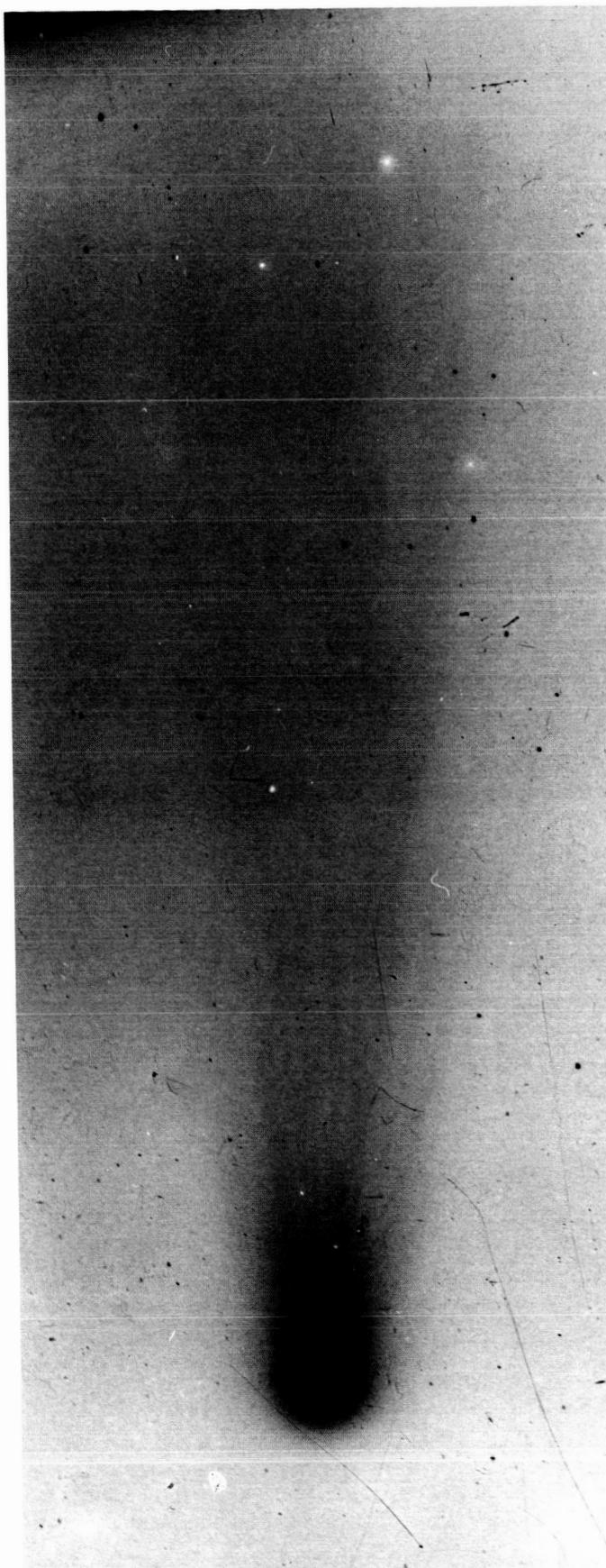


Figure 158-2. 1910 May 1.913; exposure 9 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.6 \text{ E}4$

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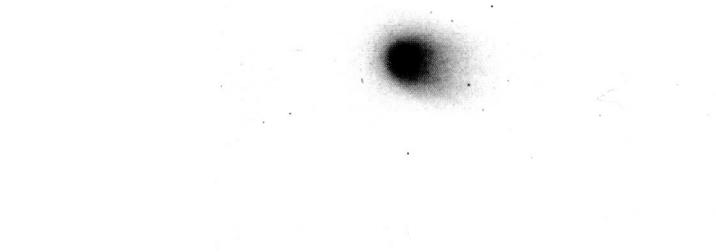


Figure 159. 1910 May 1.919; exposure 2 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.6 \text{ E}4$



Figure 160-1. 1910 May 1.974; exposure 35 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.1 \text{ E}4$



Figure 160-2. 1910 May 1.974; exposure 35 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.1 \text{ E}4$

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Figure 160-3. 1910 May 1.974; exposure 35 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.1 \text{ E}4$

Figure 161. 1910 May 1.996; exposure 23 minutes; $r = 0.64$, $\Delta = 0.75$, $\theta = 39^\circ$, $\alpha = 91^\circ$, $S = 1.1 \text{ E}4$

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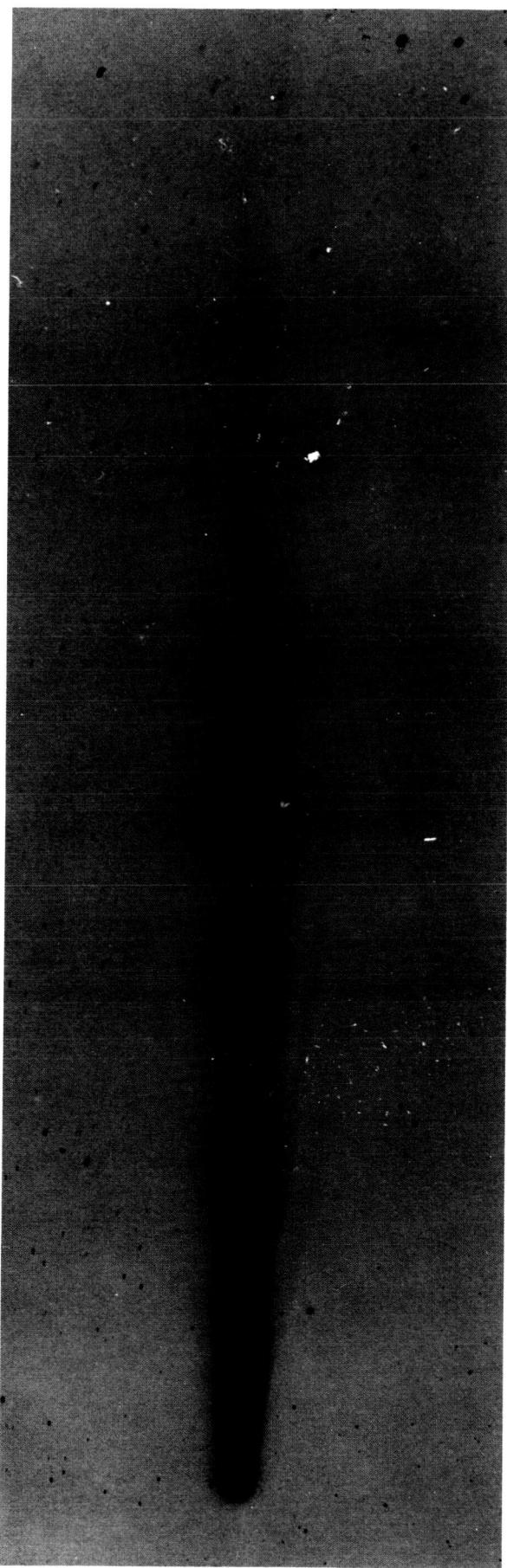


Figure 162. 1910 May 2.107; exposure 38 minutes; $r = 0.64$, $\Delta = 0.74$, $\theta = 39^\circ$, $\alpha = 92^\circ$, $S = 6.9$ E4

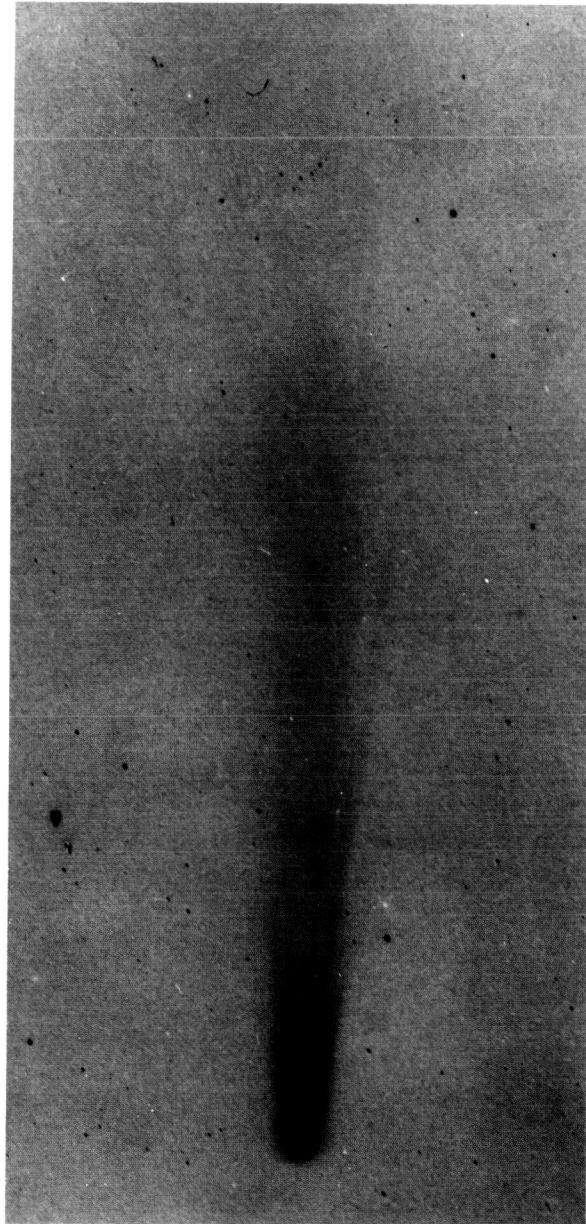


Figure 163. 1910 May 2.127; exposure 7 minutes; $r = 0.64$, $\Delta = 0.74$, $\theta = 39^\circ$, $\alpha = 92^\circ$, $S = 6.9$ E4

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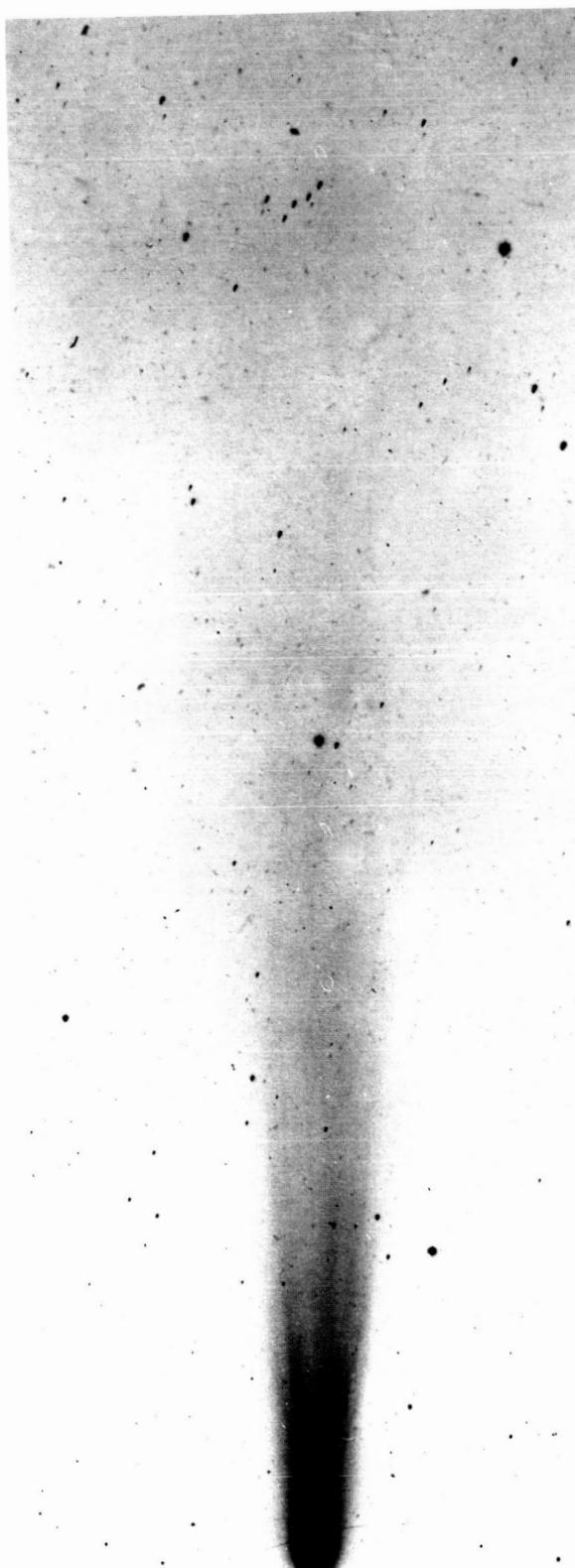


Figure 164. 1910 May 2.309; exposure 60 minutes; $r = 0.64$, $\Delta = 0.74$, $\theta = 40^\circ$, $\alpha = 92^\circ$, $S = 5.2 \text{ E}4$

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Figure 165. 1910 May 2.461; exposure 22 minutes; $r = 0.65$, $\Delta = 0.73$, $\theta = 40^\circ$, $\alpha = 93^\circ$, $S = 6.4 \text{ E}4$

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Figure 166-1. 1910 May 2.473; exposure 38 minutes; $r = 0.65$, $\Delta = 0.73$, $\theta = 40^\circ$, $\alpha = 93^\circ$, $S = 2.9$ E4

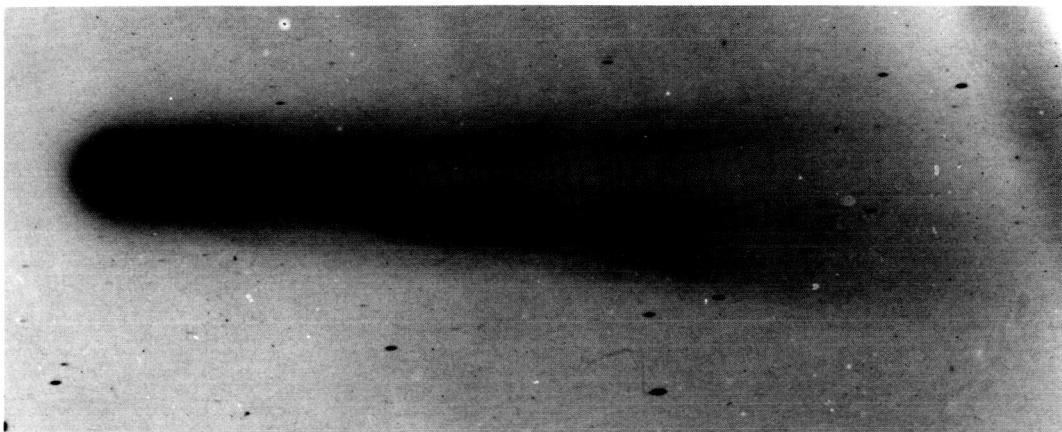


Figure 166-2. 1910 May 2.473; exposure 38 minutes; $r = 0.65$, $\Delta = 0.73$, $\theta = 40^\circ$, $\alpha = 93^\circ$, $S = 2.9$ E4

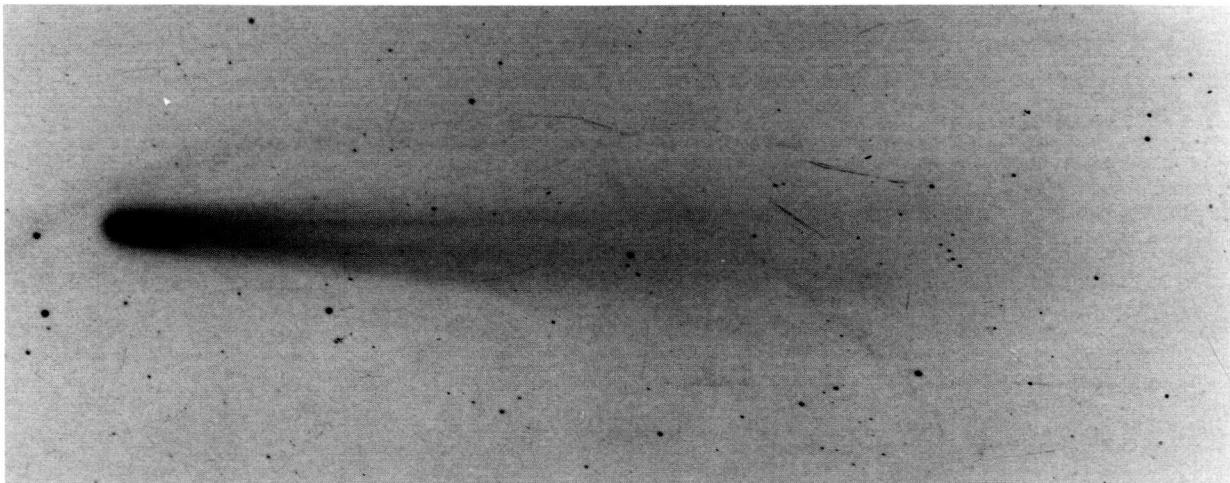


Figure 167. 1910 May 2.869; exposure 15 minutes; $r = 0.65$, $\Delta = 0.71$, $\theta = 40^\circ$, $\alpha = 94^\circ$, $S = 8.4$ E4

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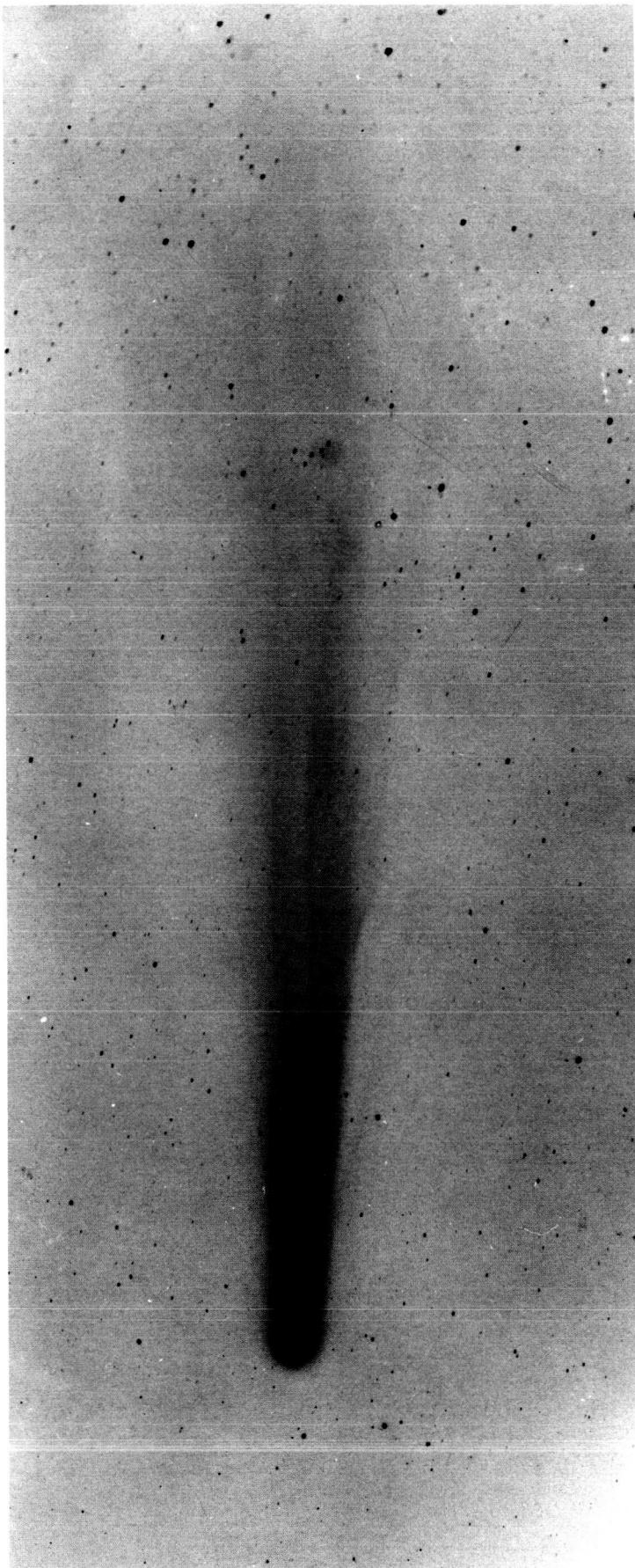


Figure 168. 1910 May 2.894; exposure 36 minutes; $r = 0.65$, $\Delta = 0.71$, $\theta = 40^\circ$, $\alpha = 94^\circ$, $S = 7.3$ E4

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Figure 169-1. 1910 May 2.583; exposure 15 minutes; $r = 0.65$,
 $\Delta = 0.73$, $\theta = 40^\circ$, $\alpha = 93^\circ$, $S = 1.6$ E4

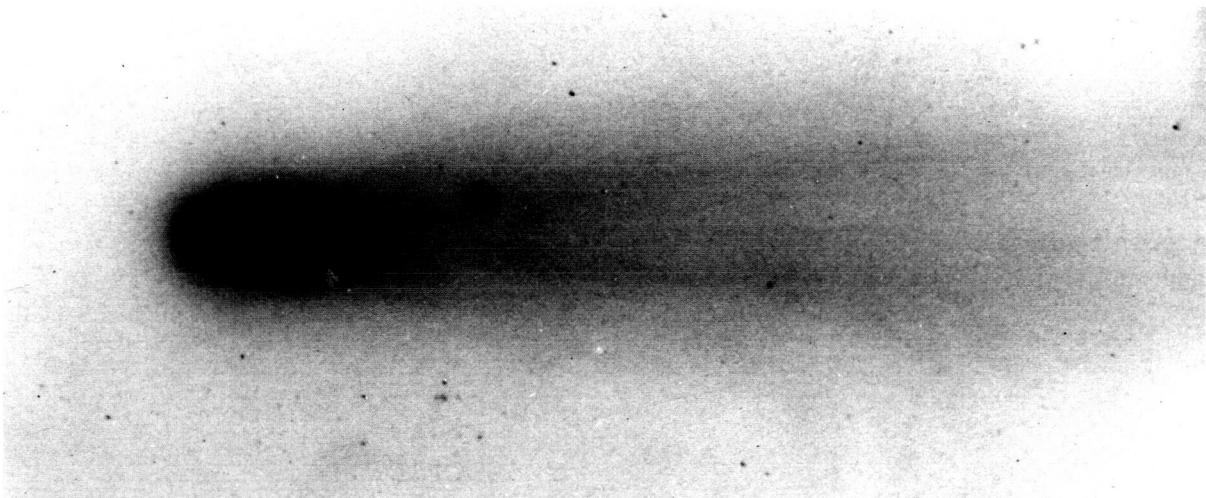


Figure 169-2. 1910 May 2.583; exposure 15 minutes; $r = 0.65$, $\Delta = 0.73$, $\theta = 40^\circ$, $\alpha = 93^\circ$, $S = 1.6$ E4



Figure 171a. 1910 May 2.894; exposure 2
minutes; $r = 0.65$, $\Delta = 0.71$, $\theta = 40^\circ$, $\alpha = 94^\circ$,
 $S = 1.6$ E4

Figure 171b. 1910 May 2.890; exposure 3
minutes; $r = 0.65$, $\Delta = 0.71$, $\theta = 40^\circ$, $\alpha = 94^\circ$,
 $S = 1.6$ E4

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Figure 170-1. 1910 May 2.874; exposure 30 minutes; $r = 0.65$, $\Delta = 0.71$, $\theta = 40^\circ$, $\alpha = 94^\circ$, $S = 1.6 \text{ E}4$

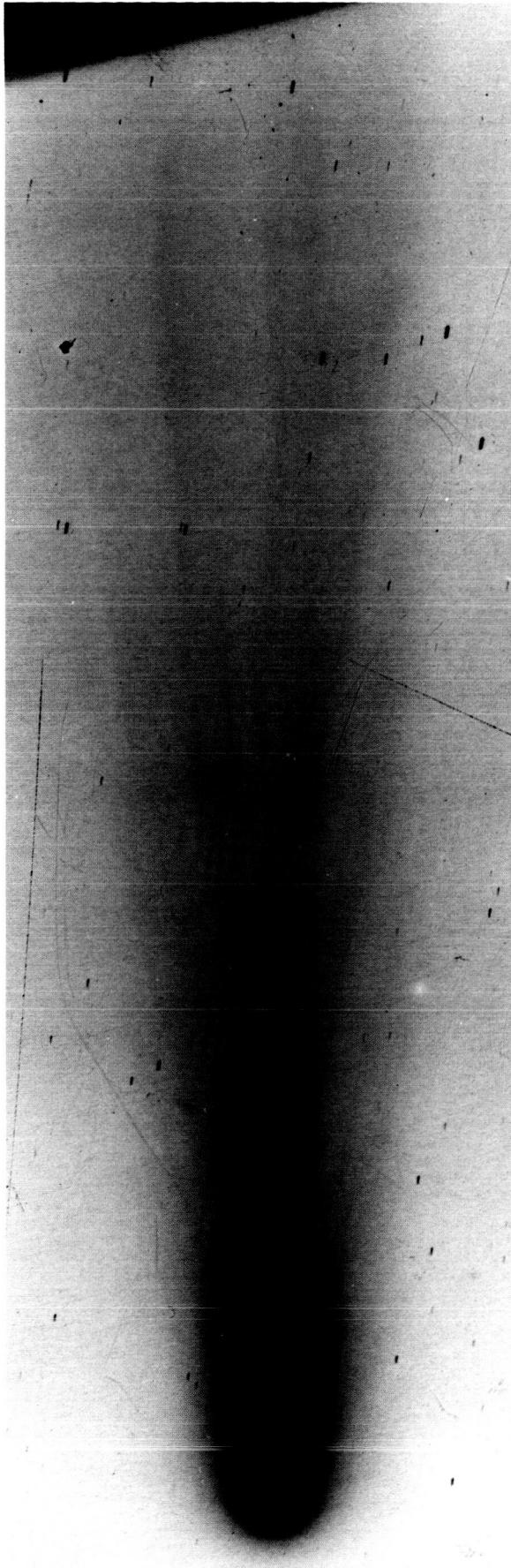


Figure 170-2. 1910 May 2.874; exposure 30 minutes; $r = 0.65$, $\Delta = 0.71$, $\theta = 40^\circ$, $\alpha = 94^\circ$, $S = 1.6 \text{ E}4$



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Figure 172-1. 1910 May 2.899; exposure 10 minutes; $r = 0.65, \Delta = 0.71$,
 $\theta = 40^\circ, \alpha = 94^\circ, S = 1.6$ E4

Figure 173. 1910 May 2.908; exposure 3 minutes; $r = 0.65, \Delta = 0.71, \theta = 40^\circ, \alpha = 94^\circ, S = 1.6$ E4



Figure 172-2. 1910 May 2.899; exposure 10 minutes; $r = 0.65, \Delta = 0.71, \theta = 40^\circ, \alpha = 94^\circ, S = 1.6$ E4

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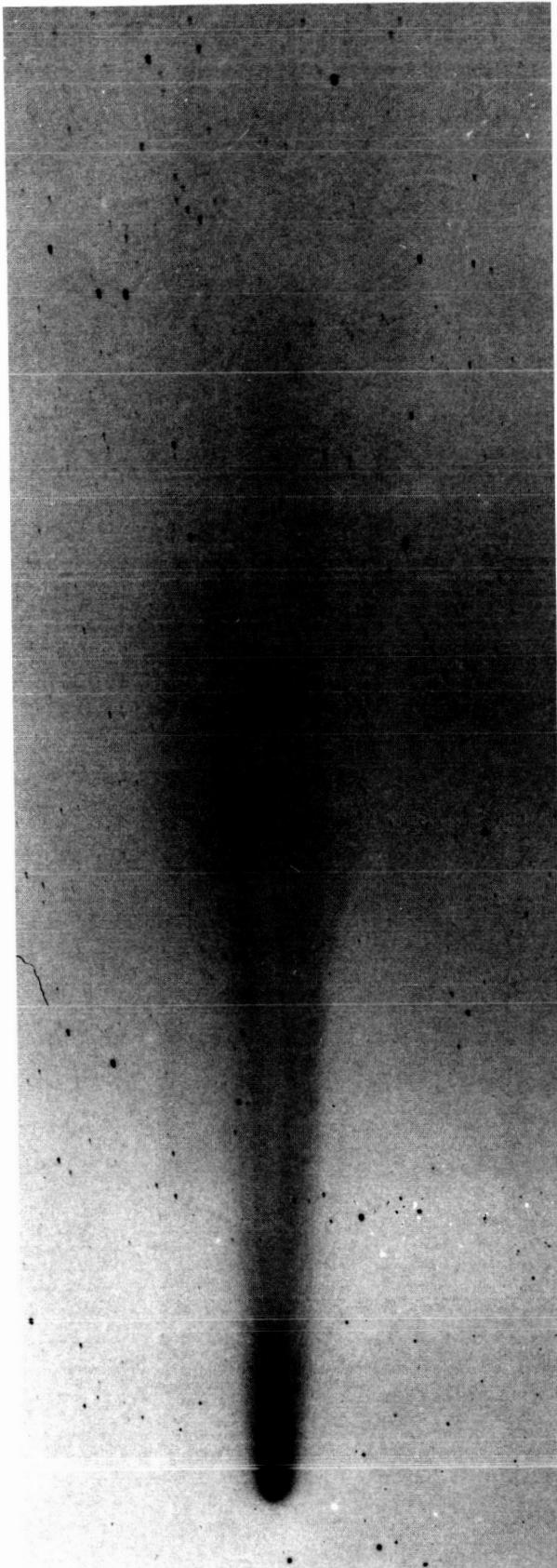


Figure 174. 1910 May 3.092; exposure 21 minutes; $r = 0.65$, $\Delta = 0.71$, $\theta = 40^\circ$, $\alpha = 95^\circ$, $S = 6.6$ E4

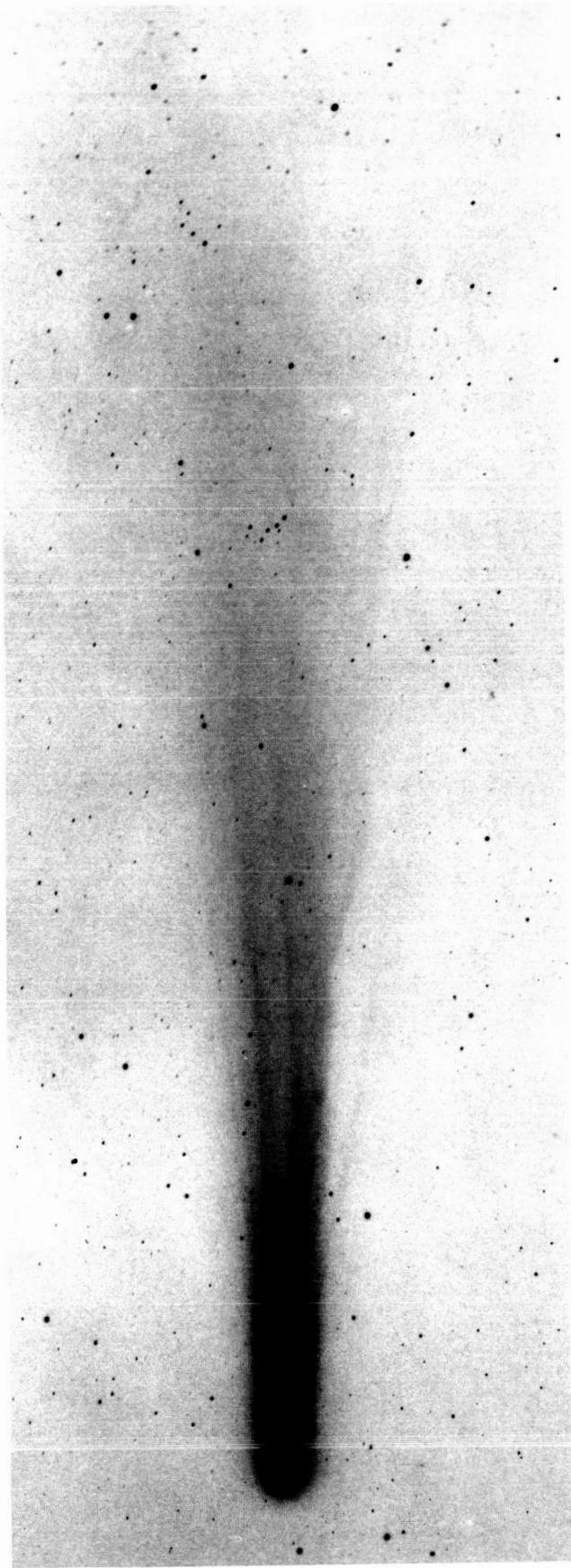


Figure 175. 1910 May 3.110; exposure 20 minutes; $r = 0.65$, $\Delta = 0.71$, $\theta = 40^\circ$, $\alpha = 95^\circ$, $S = 6.6$ E4

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Figure 176. 1910 May 3.464; exposure 8 minutes; $r = 0.66$, $\Delta = 0.69$, $\theta = 40^\circ$, $\alpha = 96^\circ$, $S = 1.8$ E5

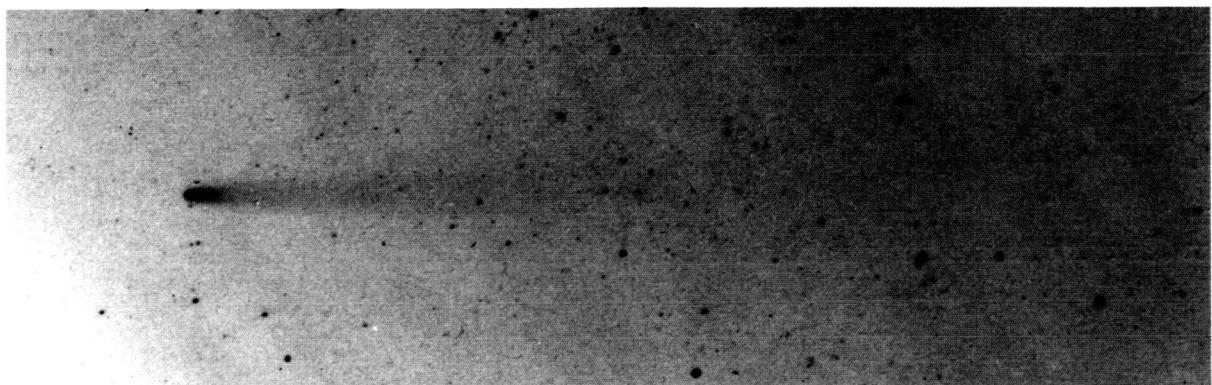


Figure 177. 1910 May 3.874; exposure 34 minutes; $r = 0.66$, $\Delta = 0.68$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 1.6$ E5

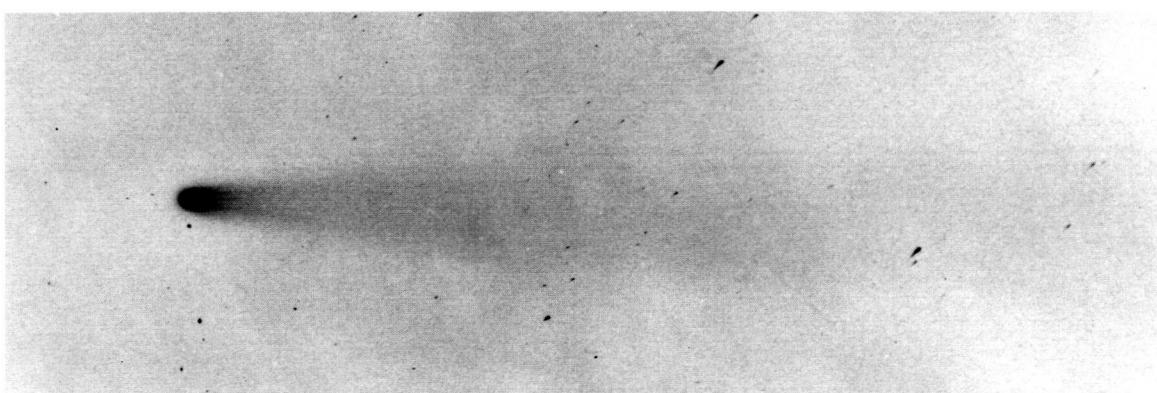


Figure 178. 1910 May 3.875; exposure 37 minutes; $r = 0.66$, $\Delta = 0.68$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 6.5$ E4

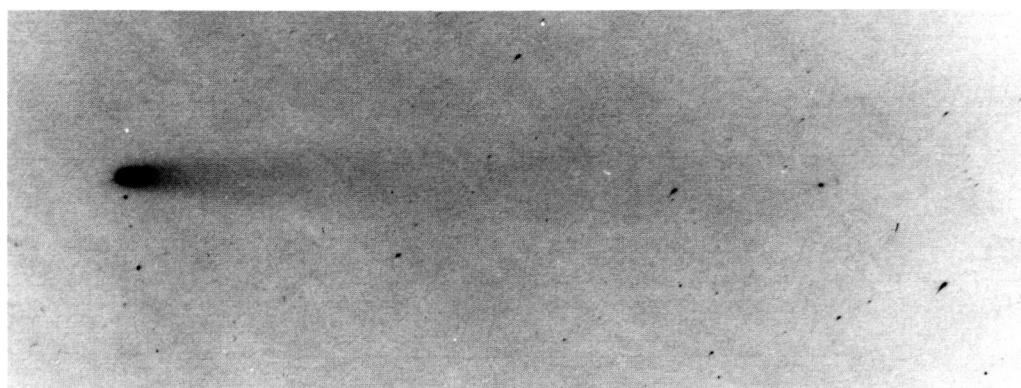


Figure 179. 1910 May 3.875; exposure 38 minutes; $r = 0.66$, $\Delta = 0.68$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 8.8$ E4

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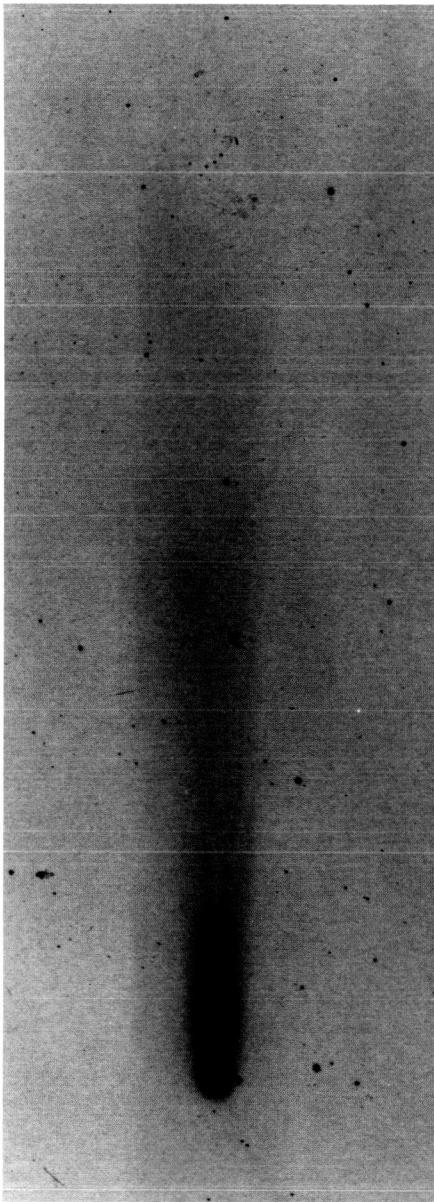


Figure 180. 1910 May 3.893; exposure 10 minutes; $r = 0.66$, $\Delta = 0.67$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 7.9 \text{ E}4$

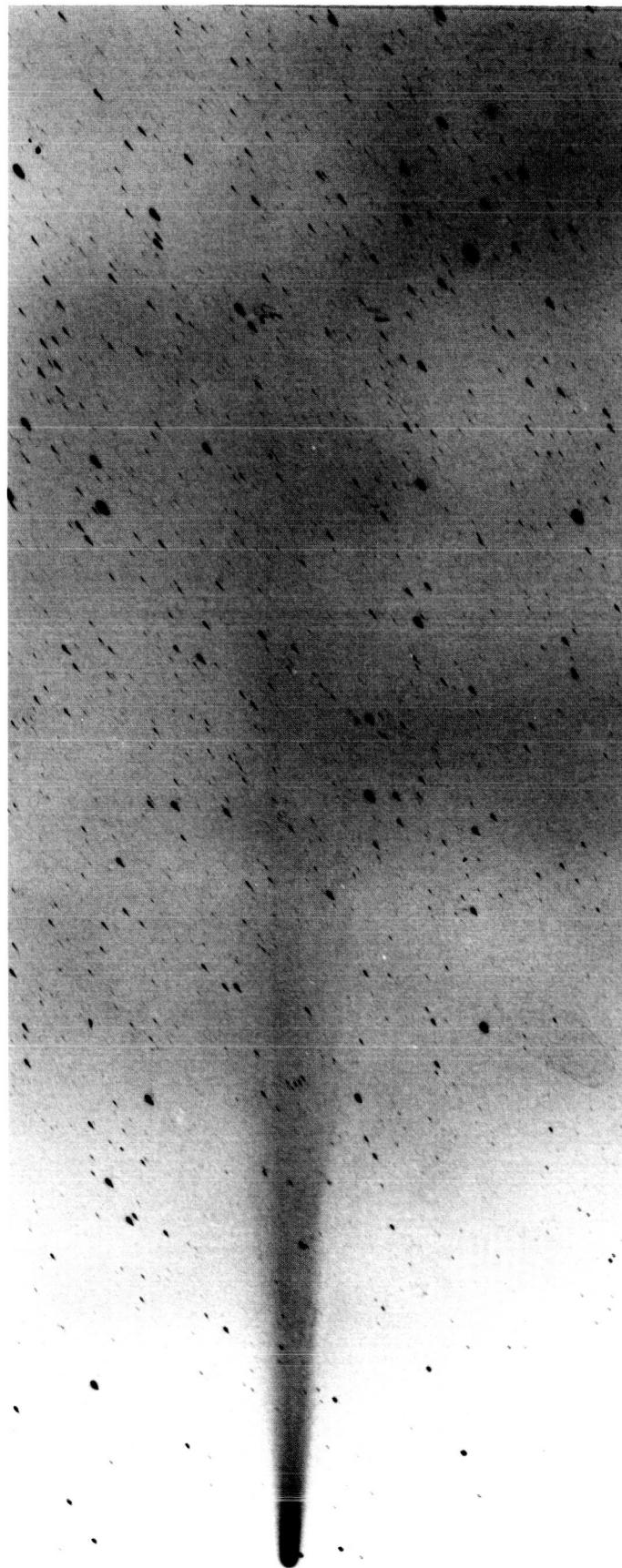


Figure 181. 1910 May 3.951; exposure 43 minutes; $r = 0.66$, $\Delta = 0.67$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 1.4 \text{ E}5$

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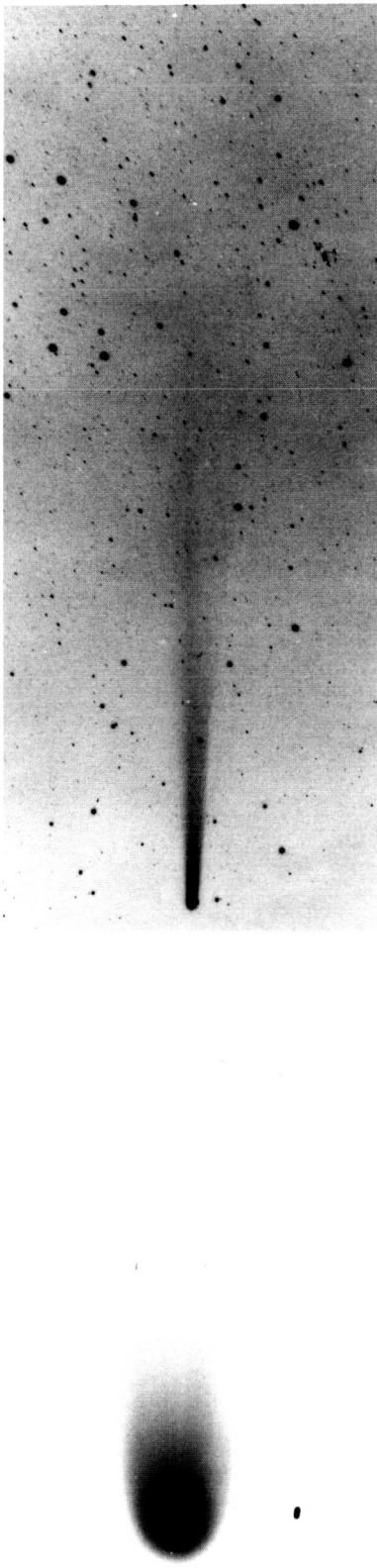


Figure 183-1. 1910 May 3.875; exposure 25 minutes; $r = 0.66$, $\Delta = 0.68$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 1.5 \text{ E}4$

Figure 182. 1910 May 3.953; exposure 39 minutes; $r = 0.66$, $\Delta = 0.67$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 2.8 \text{ E}5$

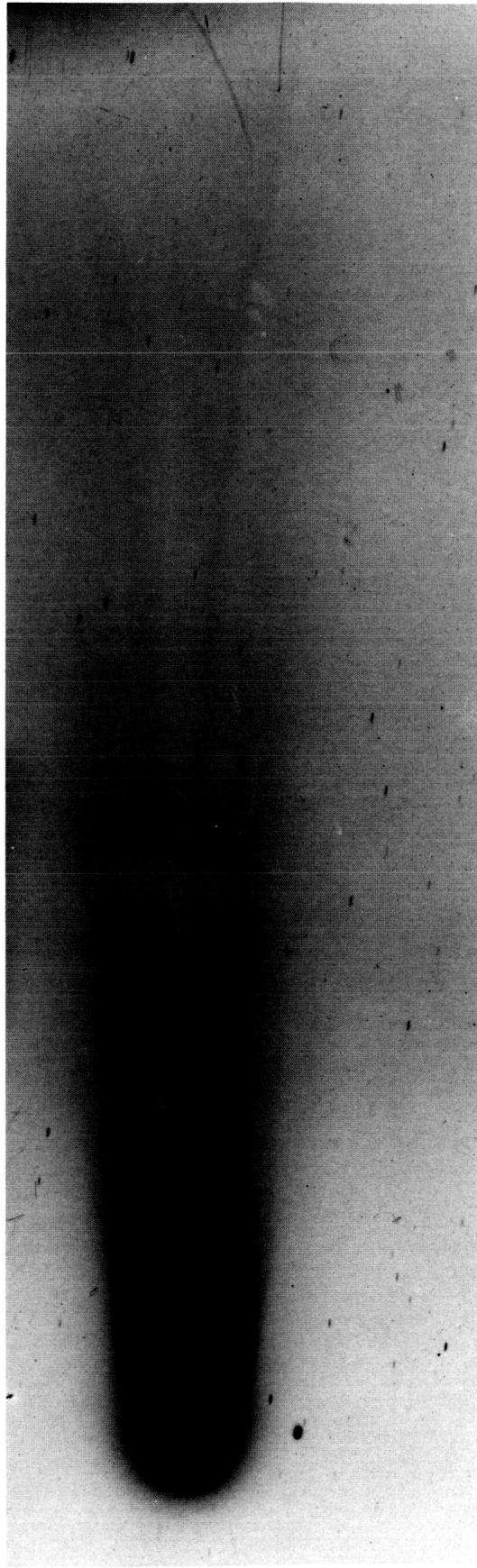


Figure 183-2. 1910 May 3.875; exposure 25 minutes; $r = 0.66$, $\Delta = 0.68$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 1.5 \text{ E}4$

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Figure 184a. 1910 May 3.893; exposure 2 minutes; $r = 0.66$, $\Delta = 0.67$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 1.5 E4$

Figure 184b. 1910 May 3.890; exposure 4 minutes; $r = 0.66$, $\Delta = 0.67$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 1.5 E4$

Figure 185-1. 1910 May 3.905; exposure 15 minutes; $r = 0.66$, $\Delta = 0.67$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 1.5 E4$

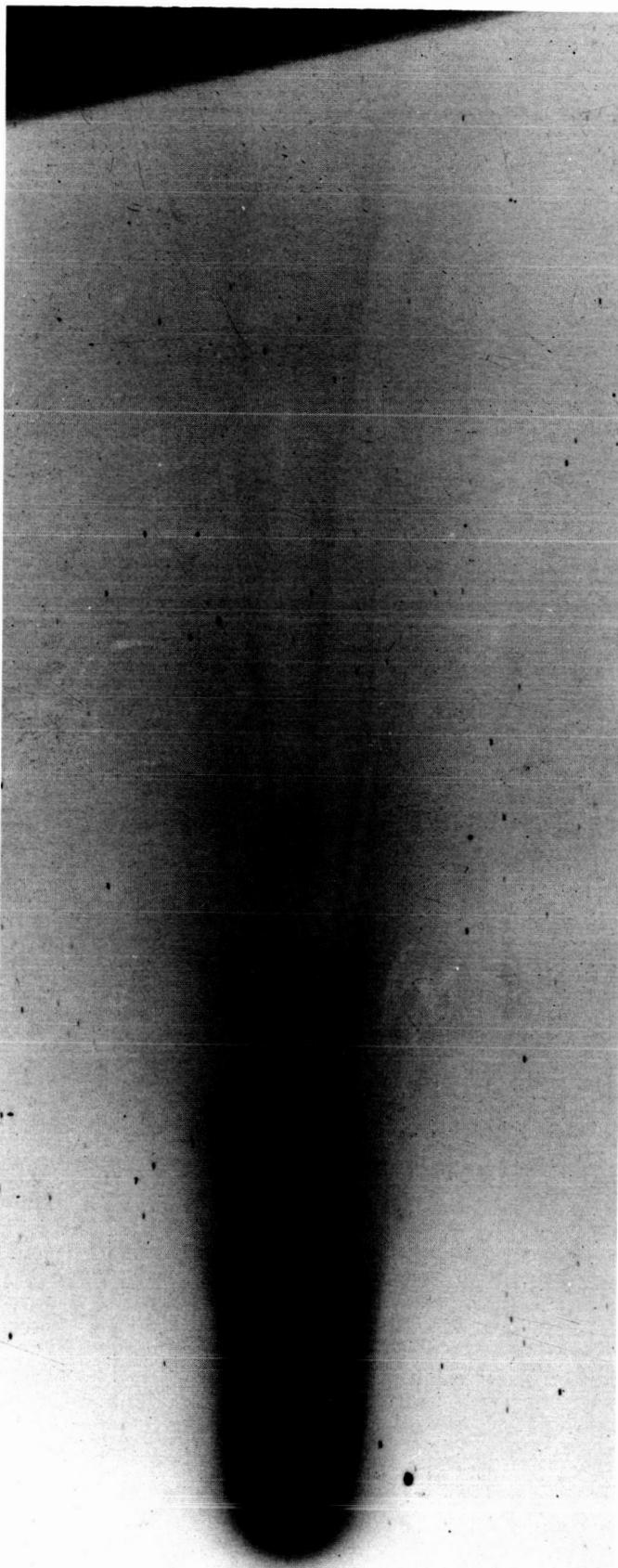


Figure 185-2. 1910 May 3.905; exposure 15 minutes; $r = 0.66$, $\Delta = 0.67$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 1.5 E4$

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Figure 186-1. 1910 May 3.913; exposure
3 minutes; $r = 0.66$, $\Delta = 0.67$, $\theta = 40^\circ$,
 $\alpha = 97^\circ$, $S = 1.5 E4$



Figure 186-2. 1910 May 3.913; exposure 3 minutes; $r = 0.66$, $\Delta = 0.67$, $\theta = 40^\circ$, $\alpha = 97^\circ$, $S = 1.5 E4$

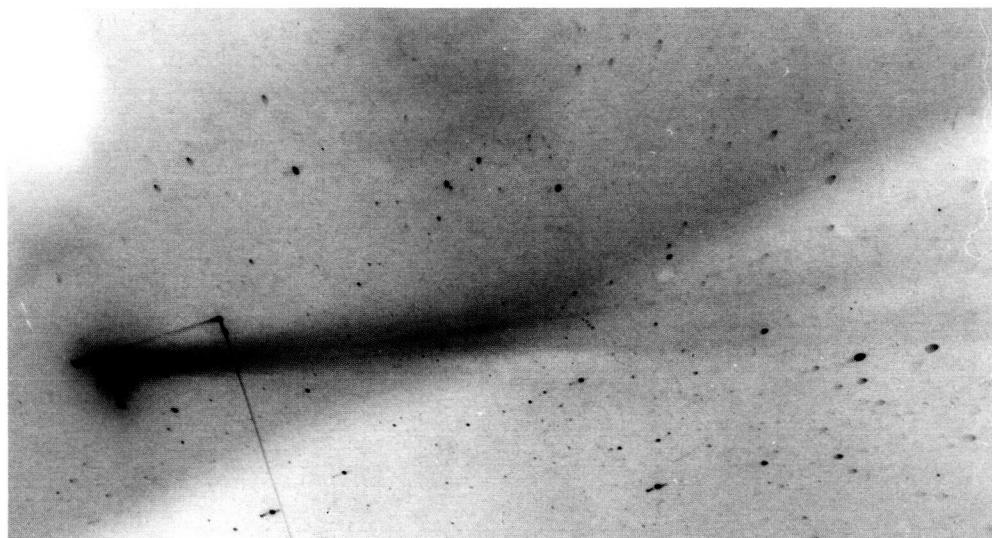


Figure 188. 1910 May 4.472; exposure 49 minutes; $r = 0.67$, $\Delta = 0.65$, $\theta = 41^\circ$, $\alpha = 99^\circ$, $S = 1.7 E5$

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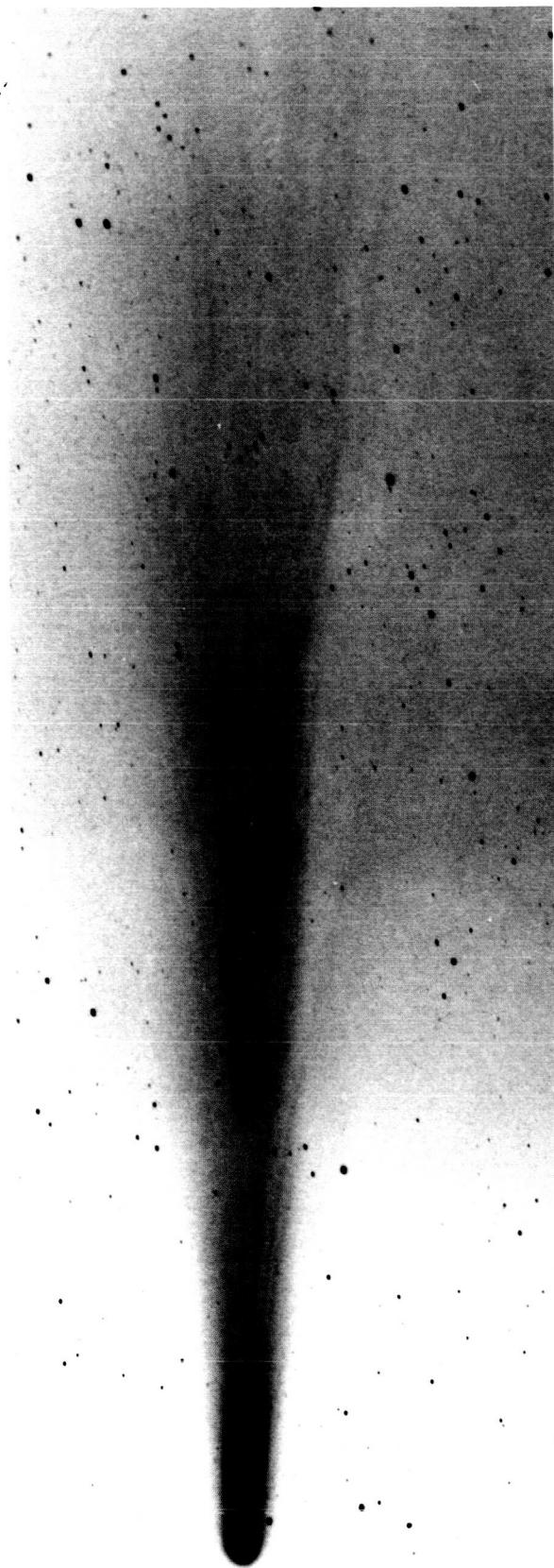


Figure 187. 1910 May 4.113; exposure 36 minutes; $r = 0.66$, $\Delta = 0.66$, $\theta = 40^\circ$, $\alpha = 98^\circ$, $S = 6.2 \text{ E}4$

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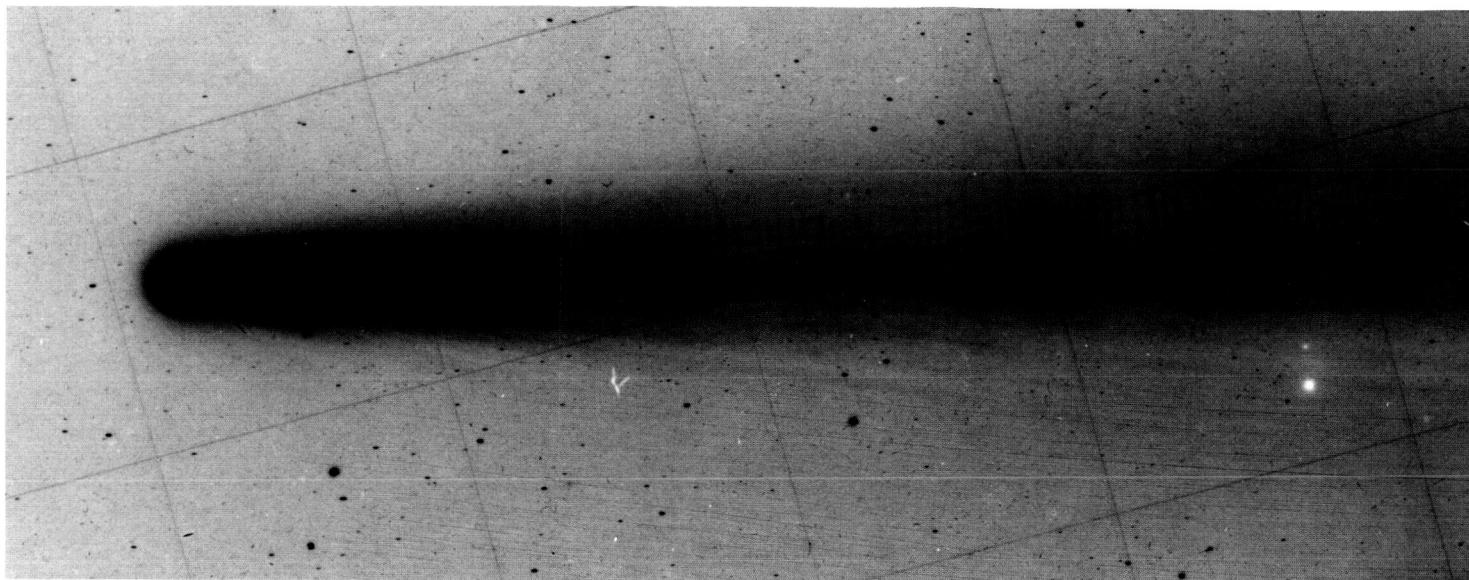


Figure 189. 1910 May 4.623; exposure 30 minutes; $r = 0.67$, $\Delta = 0.65$, $\theta = 41^\circ$, $\alpha = 99^\circ$, $S = 4.2$ E4

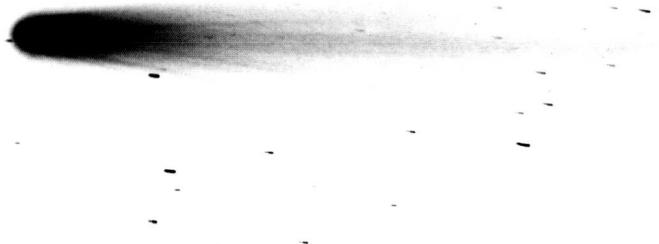


Figure 191-1. 1910 May 4.892; exposure 78 minutes; $r = 0.67$, $\Delta = 0.64$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 6.5$ E4

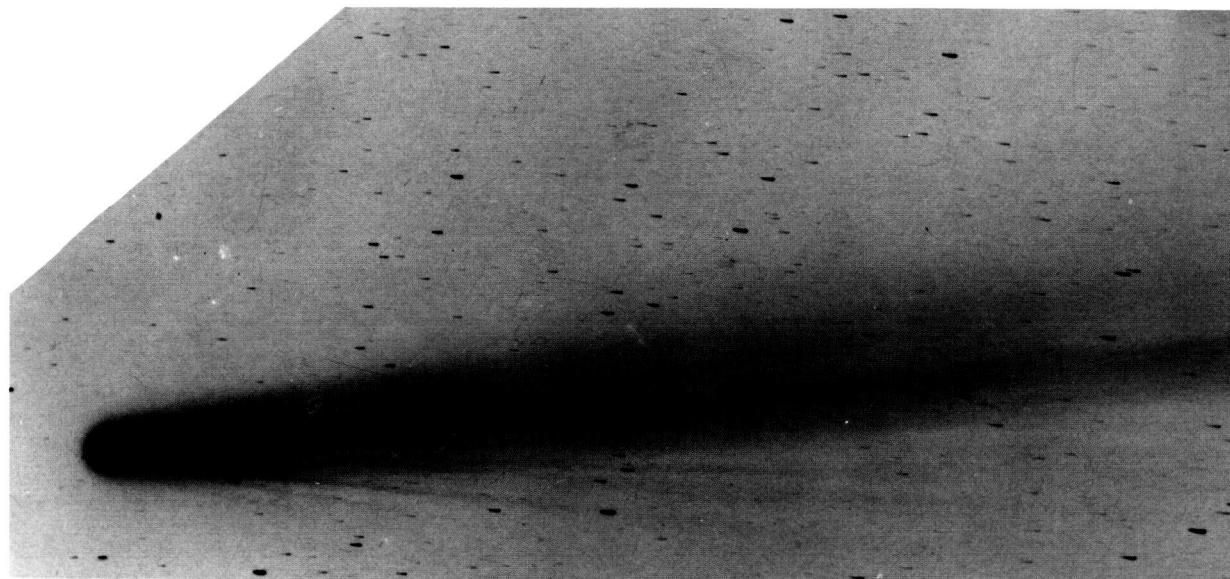


Figure 191-2. 1910 May 4.892; exposure 78 minutes; $r = 0.67$, $\Delta = 0.64$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 6.5$

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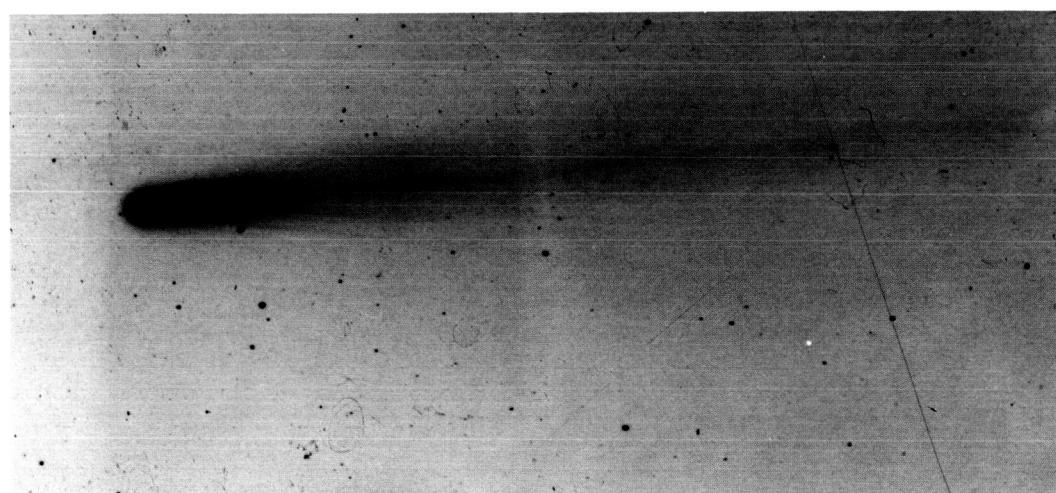


Figure 190. 1910 May 4.869; exposure 20 minutes; $r = 0.67$, $\Delta = 0.64$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 7.5 \text{ E}4$

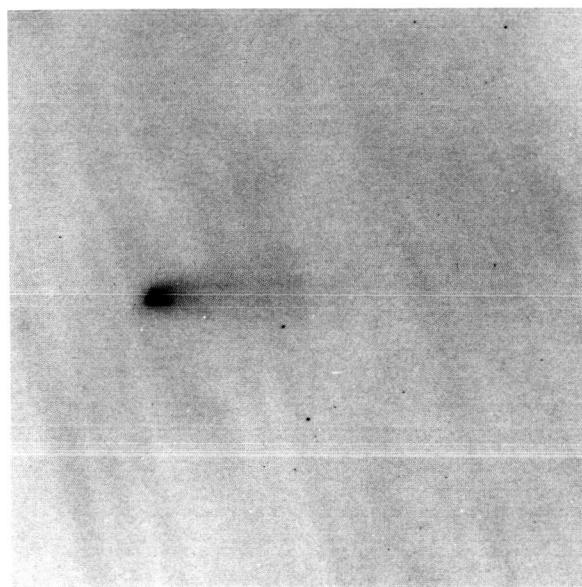
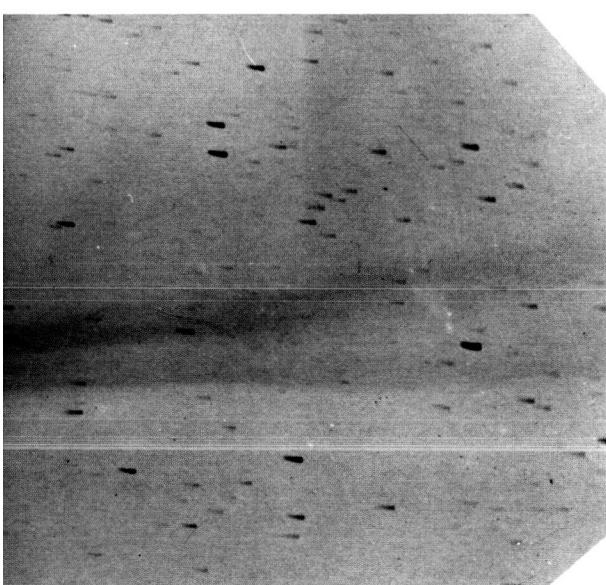


Figure 192. 1910 May 4.899; exposure 13 minutes;
 $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 6.1 \text{ E}4$

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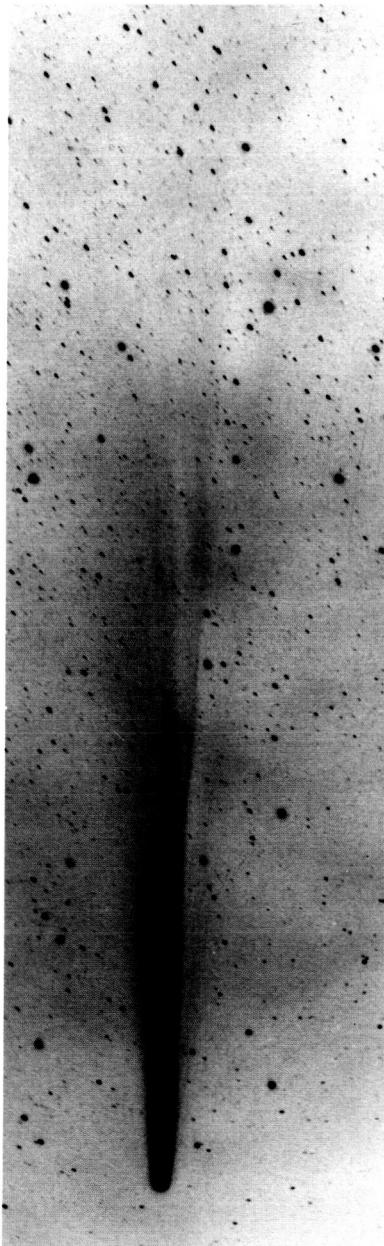


Figure 193. 1910 May 4.949; exposure 33 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 2.3 \times 10^4$

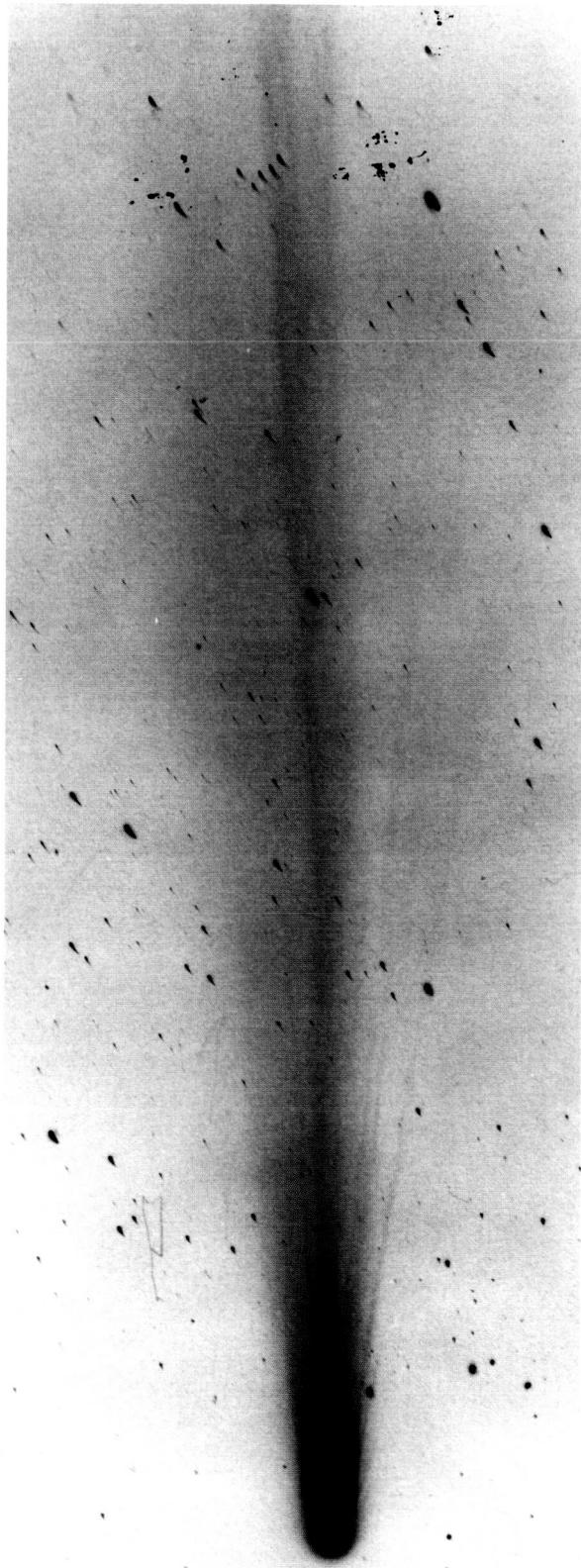


Figure 194. 1910 May 4.951; exposure 43 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 5.4 \times 10^4$

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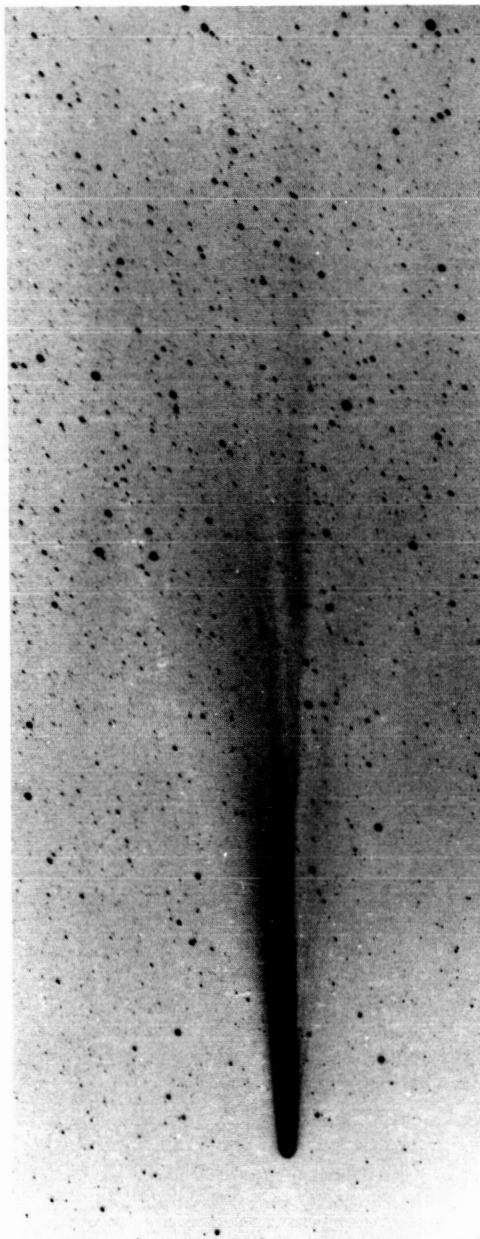


Figure 195. 1910 May 4.954; exposure 46 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 2.7 \text{ E}4$

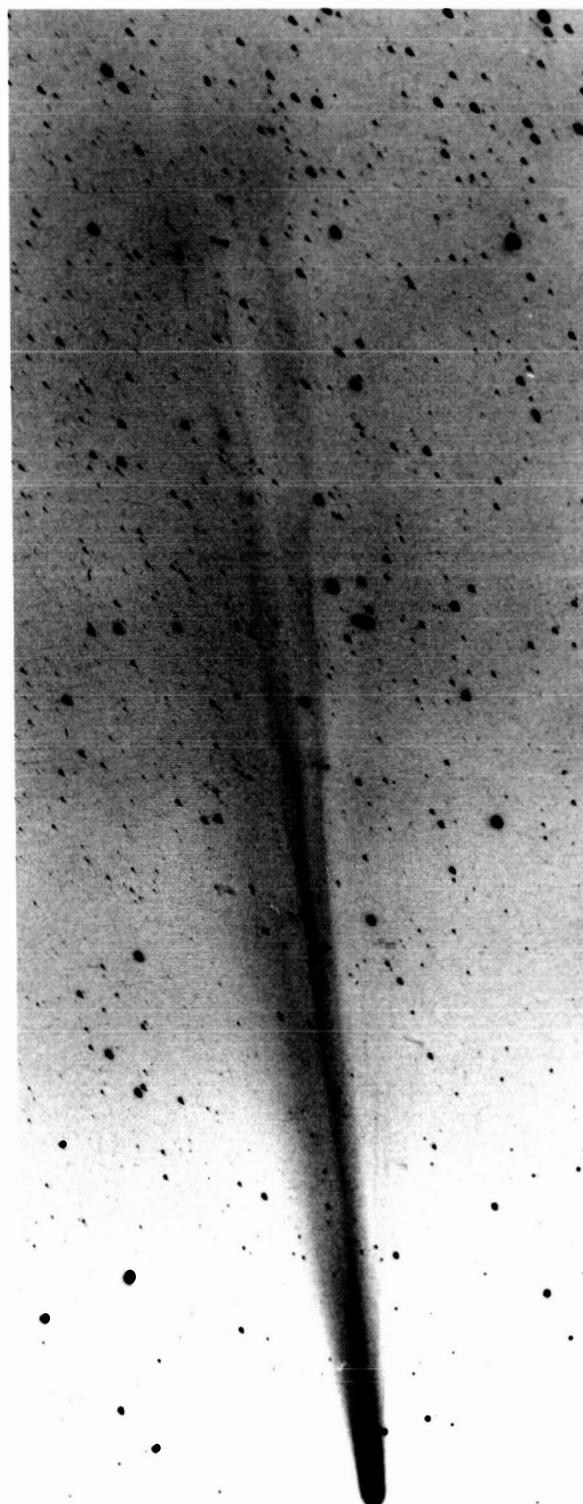


Figure 196. 1910 May 4.954; exposure 46 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 1.3 \text{ E}5$

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Figure 197-1. 1910 May 4.973; exposure 17 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, S = 5.4 E4

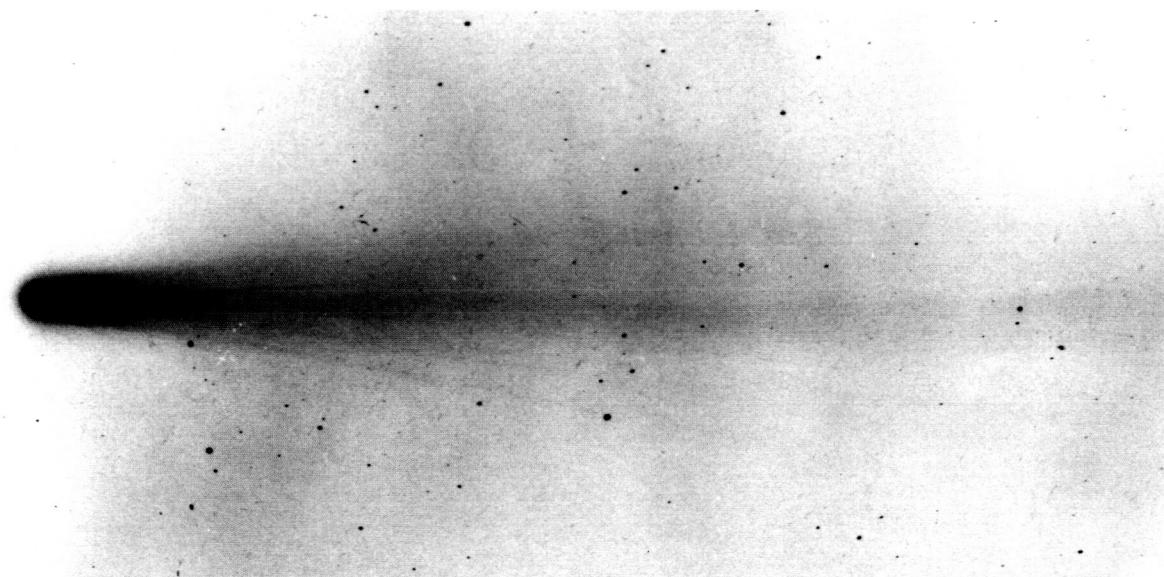


Figure 197-2. 1910 May 4.973; exposure 17 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, S = 5.4 E4

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Figure 198-1. 1910 May 4.975; exposure 55 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 6.1 E4$

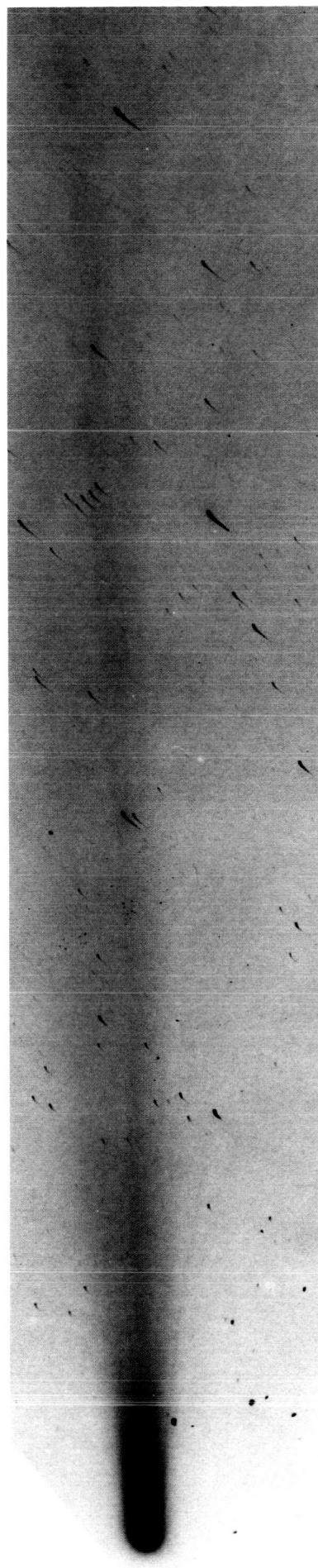


Figure 198-2. 1910 May 4.975; exposure 55 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 6.1 E4$

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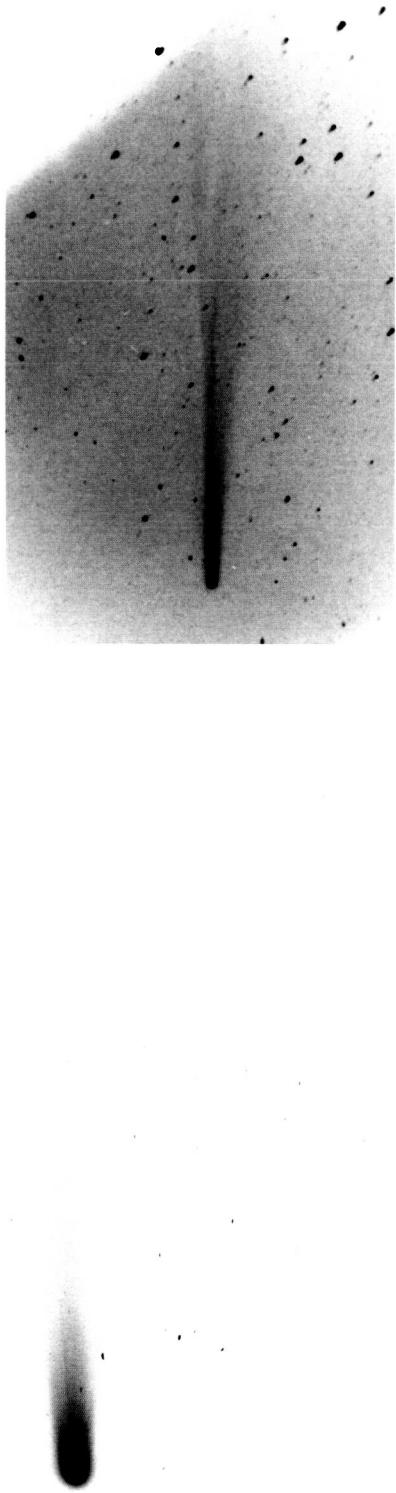


Figure 199-1. 1910 May 4.975; exposure 55 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 7.2$ E4

Figure 200. 1910 May 4.975; exposure 55 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 3.7$ E5

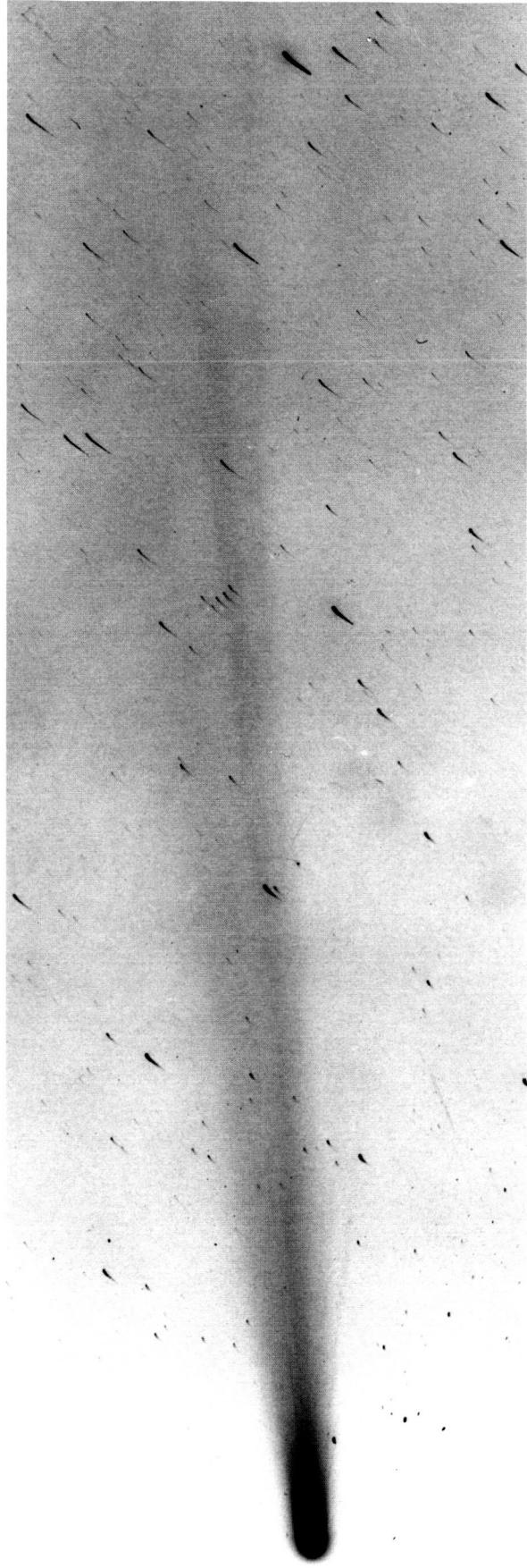


Figure 199-2. 1910 May 4.975; exposure 55 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 7.2$ E4

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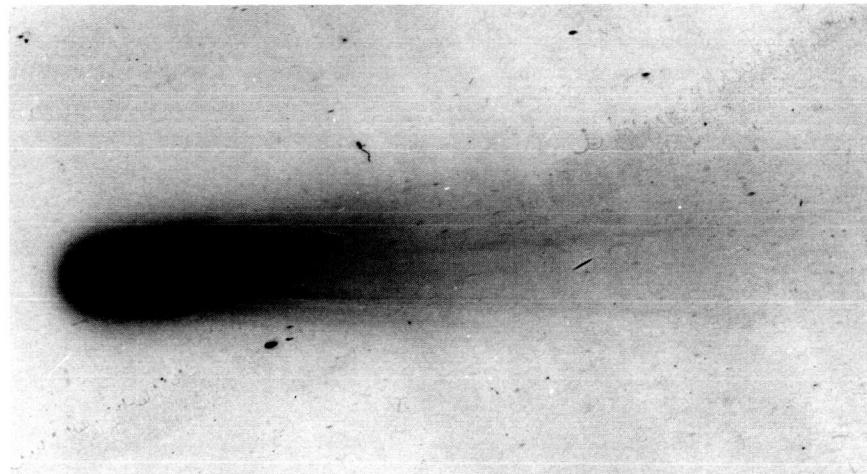


Figure 201-1. 1910 May 4.481; exposure 28 minutes; $r = 0.67$, $\Delta = 0.65$, $\theta = 41^\circ$, $\alpha = 99^\circ$, $S = 2.6 \text{ E}4$

Figure 201-2. 1910 May 4.481; exposure 28 minutes; $r = 0.67$, $\Delta = 0.65$, $\theta = 41^\circ$, $\alpha = 99^\circ$, $S = 2.6 \text{ E}4$



Figure 202-1. 1910 May 4.882; exposure 25 minutes; $r = 0.67$, $\Delta = 0.64$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 1.4 \text{ E}4$

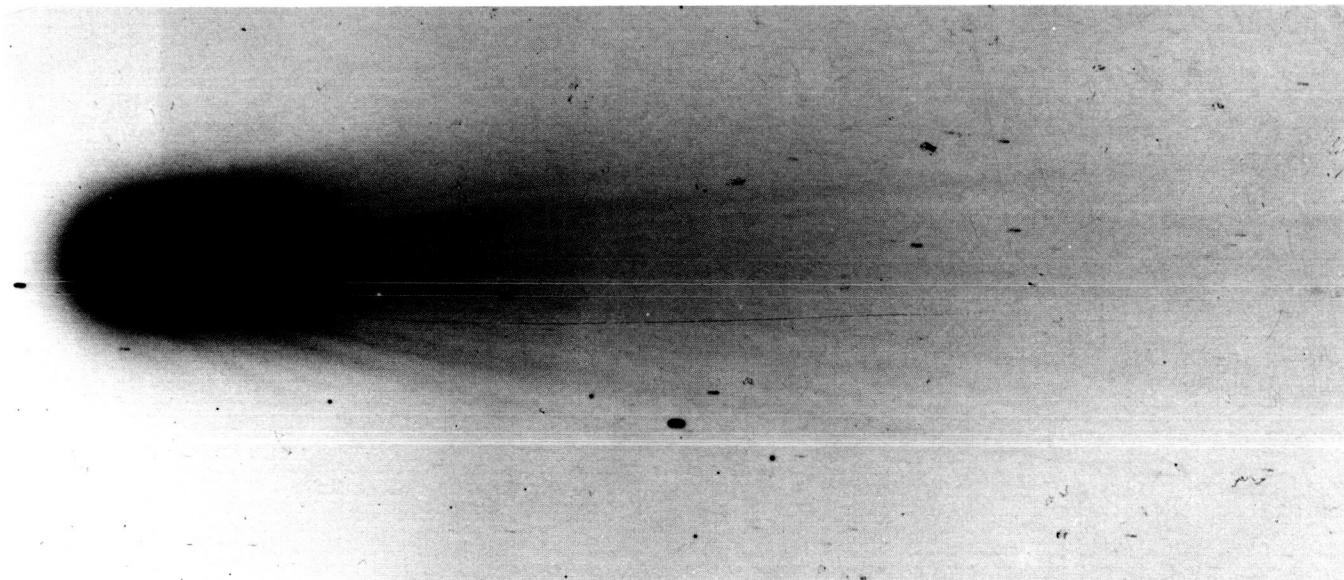


Figure 202-2. 1910 May 4.882; exposure 25 minutes; $r = 0.67$, $\Delta = 0.64$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 1.4 \text{ E}4$

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Figure 203a. 1910 May 4.899; exposure 2 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 1.4$
E4



Figure 203b. 1910 May 4.896; exposure 3 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 1.4$
E4



Figure 204-1. 1910 May 4.907; exposure 10 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$,
 $S = 1.4$ E4

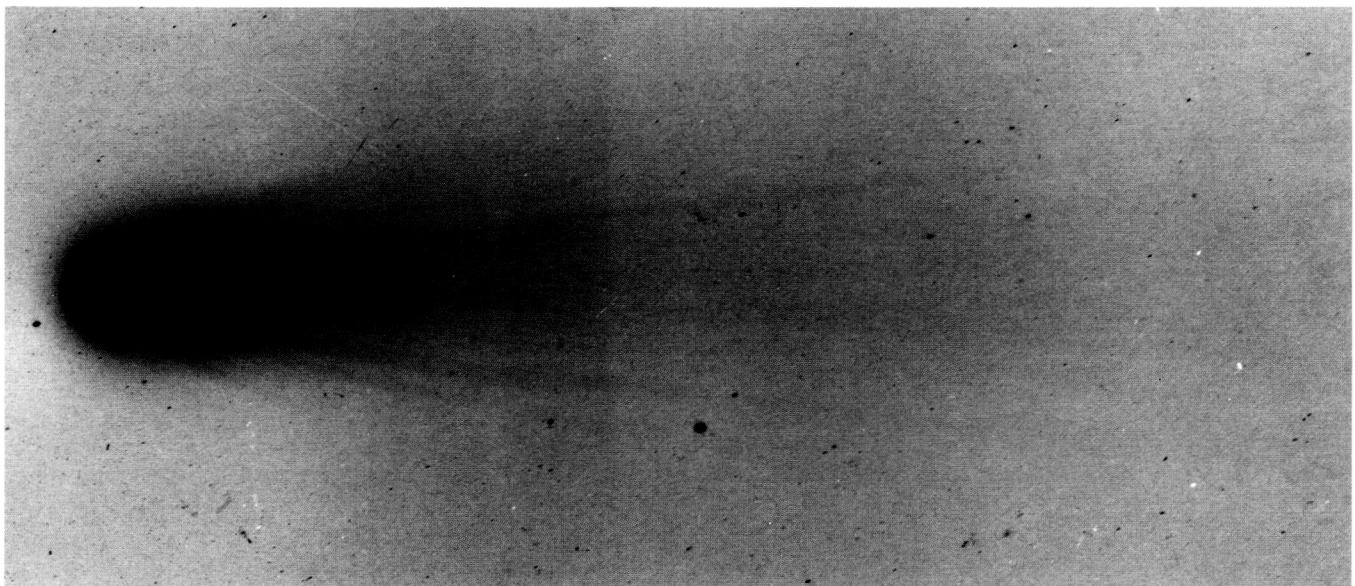


Figure 204-2. 1910 May 4.907; exposure 10 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, $S = 1.4$ E4

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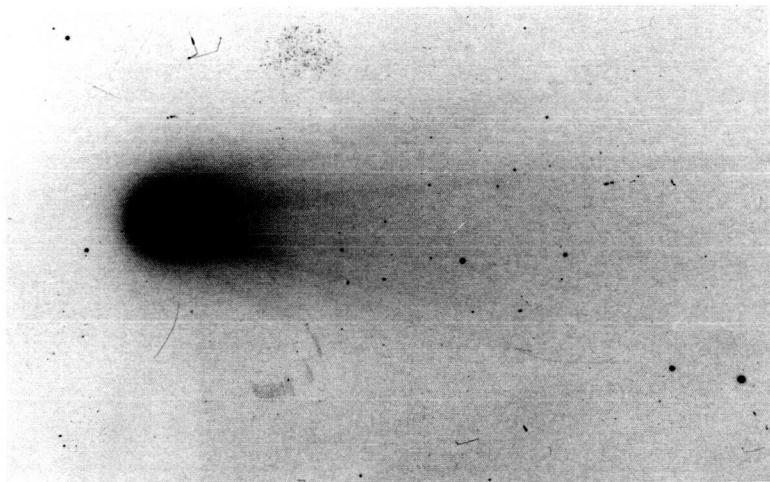


Figure 205. 1910 May 4.914; exposure 3 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, S = 1.4 E4

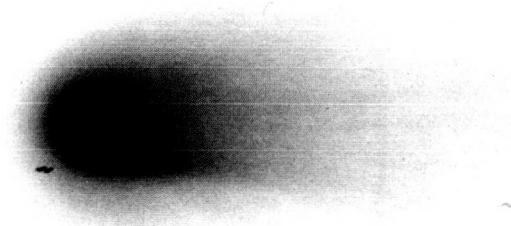


Figure 206-1. 1910 May 4.989; exposure 23 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, S = 9.0 E3

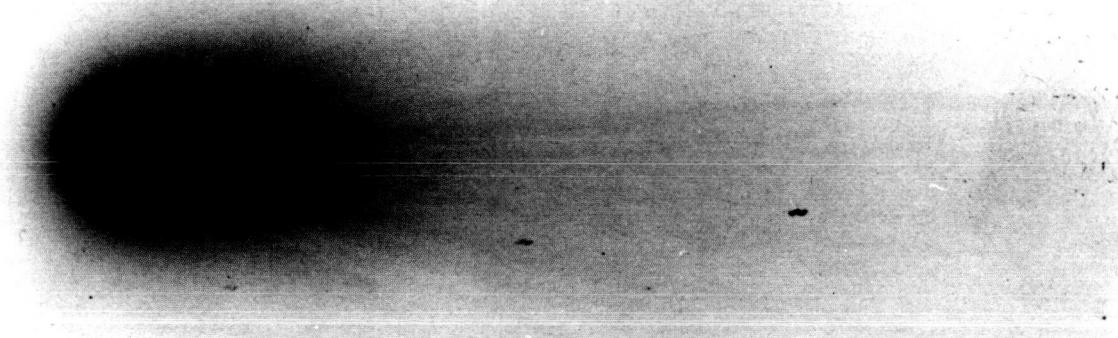


Figure 206-2. 1910 May 4.989; exposure 23 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$, S = 9.0 E3

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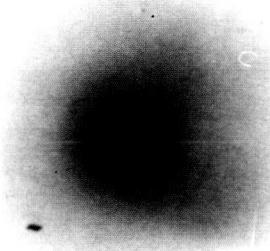


Figure 207-1. 1910 May
4.990; exposure 8
minutes; $r = 0.67$, $\Delta =$
 0.63 , $\theta = 41^\circ$, $\alpha =$
 100° , $S = 5.6$ E3



Figure 207-2. 1910 May
4.990; exposure 8
minutes; $r = 0.67$, $\Delta =$
 0.63 , $\theta = 41^\circ$, $\alpha =$
 100° , $S = 5.6$ E3



Figure 209. 1910 May 5.115; exposure 33 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$

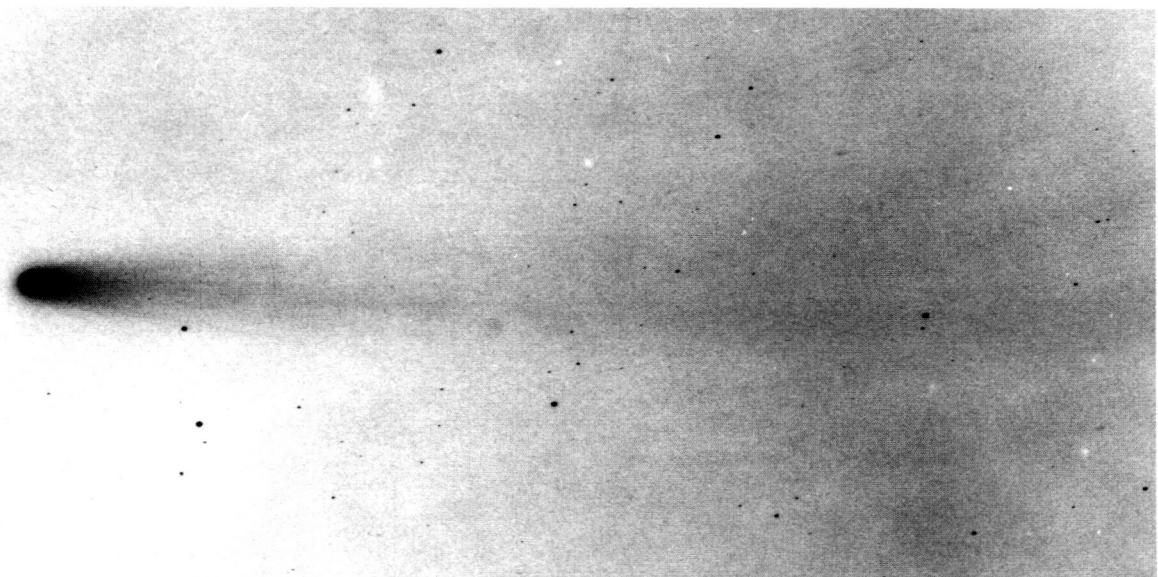


Figure 210. 1910 May 5.131; exposure 2 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 101^\circ$, $S = 5.8$ E4

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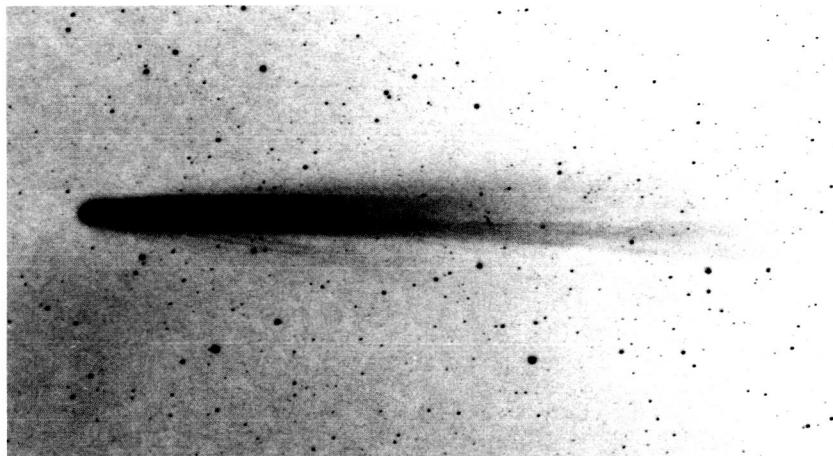
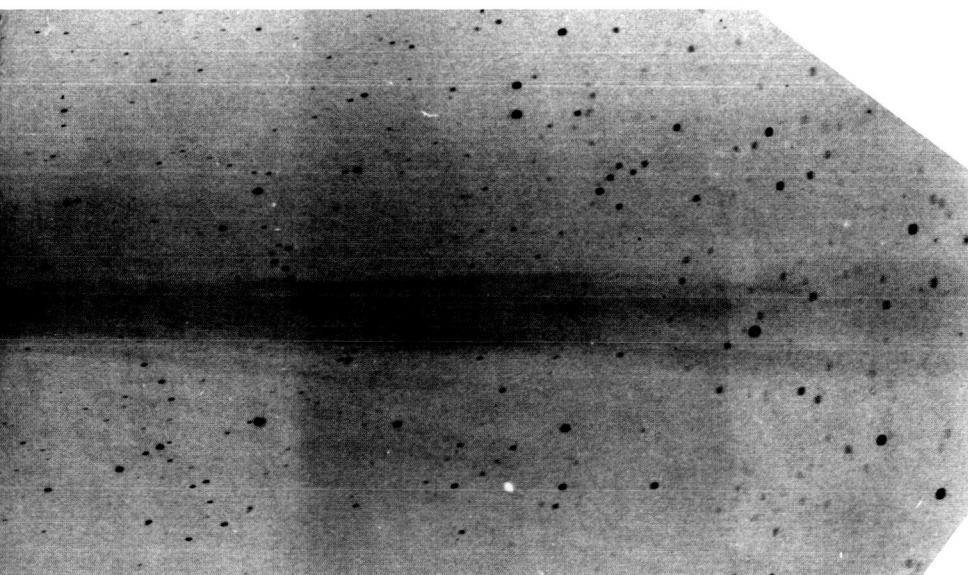


Figure 208. 1910 May 5.115; exposure 32 minutes; $r = 0.67$, $\Delta = 0.63$, $\theta = 41^\circ$, $\alpha = 100^\circ$,
 $S = 1.9 \text{ E}5$



$\alpha = 100^\circ$, $S = 5.8 \text{ E}4$



Figure 211. 1910 May 5.313; exposure 60 minutes; $r = 0.67$, $\Delta = 0.62$, $\theta = 41^\circ$, $\alpha = 101^\circ$, $S = 4.4 \text{ E}4$

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Figure 212. 1910 May 5.472; exposure 50 minutes; $r = 0.68$, $\Delta = 0.61$, $\theta = 41^\circ$, $\alpha = 102^\circ$, $S = 5.4$ E4

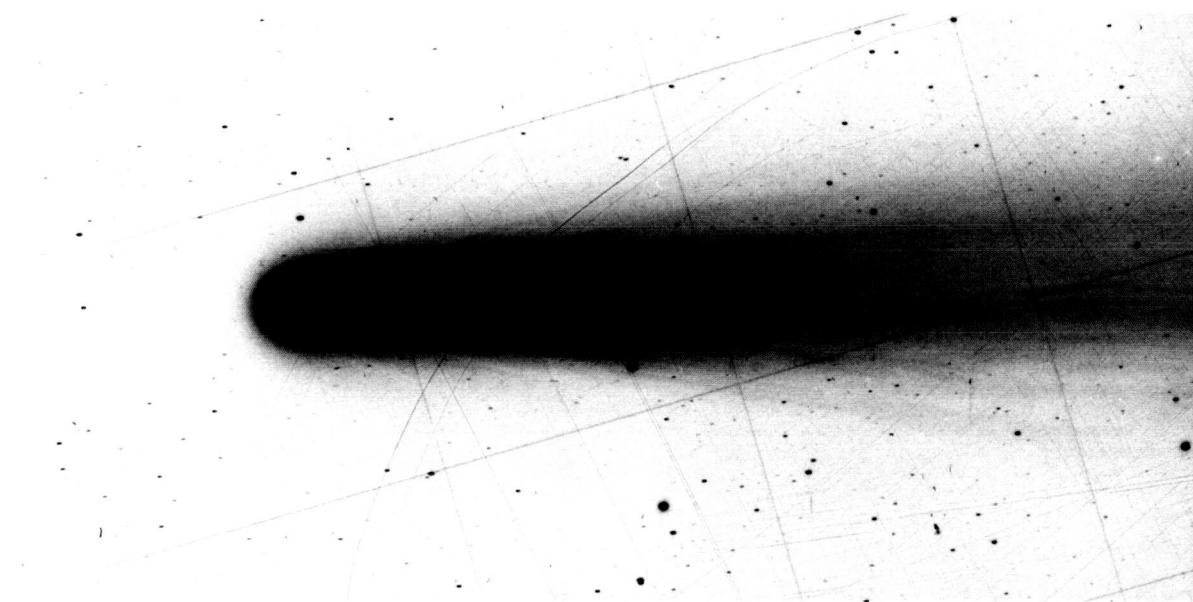
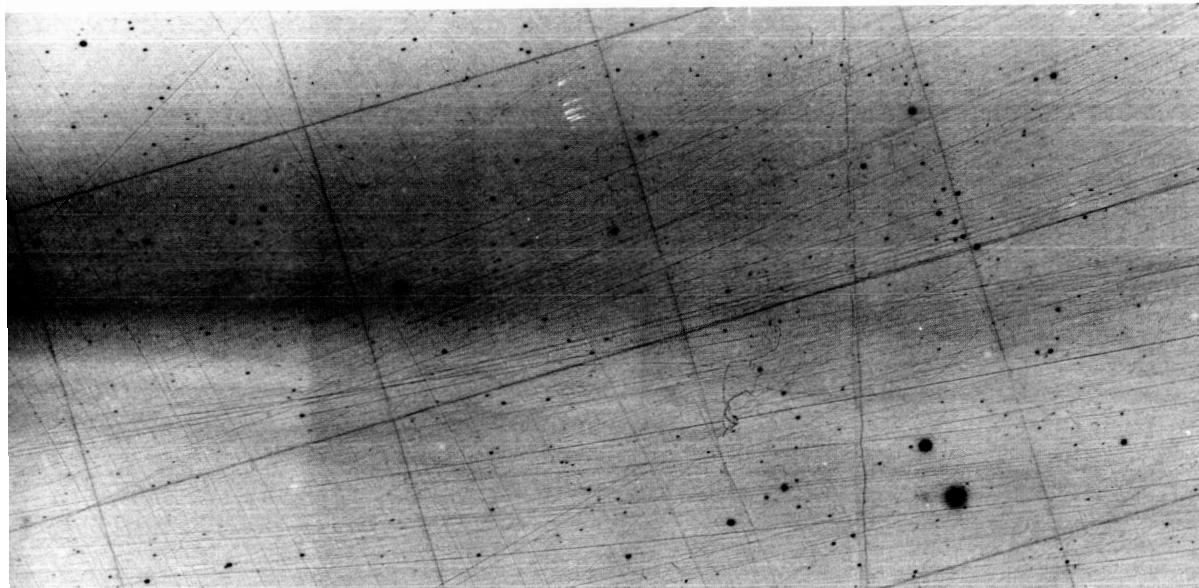


Figure 213. 1910 May 5.626; exposure 30 minutes; $r = 0.68$, $\Delta = 0.61$, $\theta = 41^\circ$, $\alpha = 102^\circ$, $S = 5.4$ E4

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S = 4.0 E4

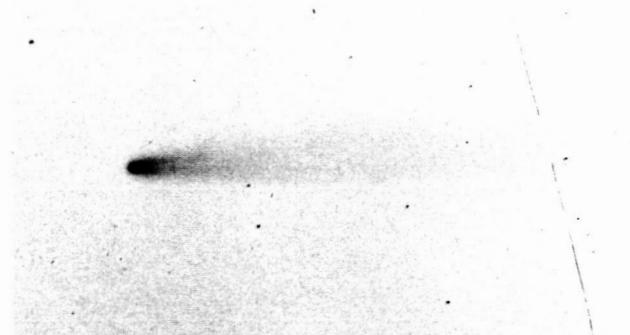


Figure 214. 1910 May 5.836; exposure 30 minutes; $r = 0.68$, $\Delta = 0.60$, $\theta = 41^\circ$, $\alpha = 103^\circ$, S = 1.3 E5

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Figure 215-1. 1910 May 5.865; exposure 20 minutes; $r = 0.68$, $\Delta = 0.60$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 7.0$ E4

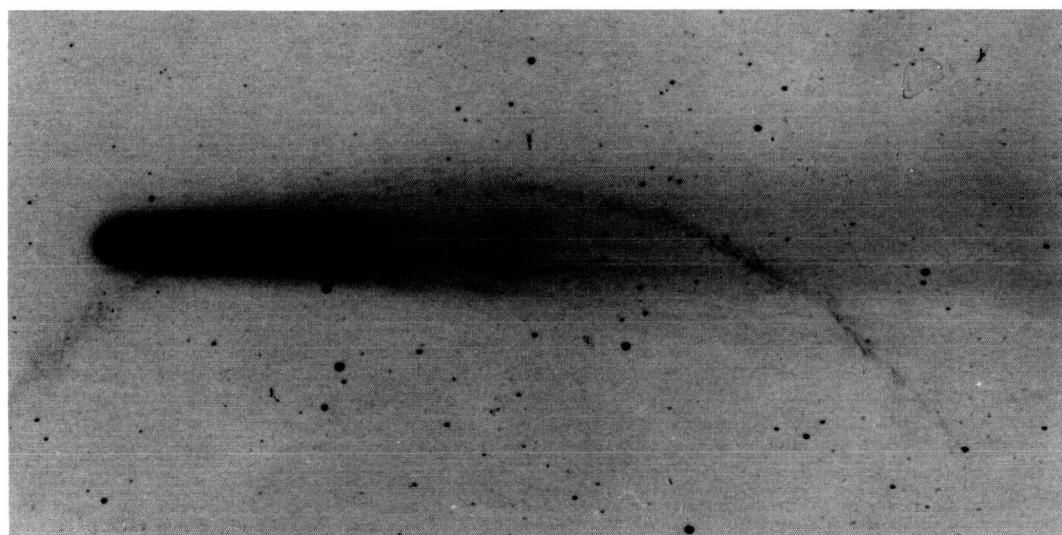


Figure 215-2. 1910 May 5.865; exposure 20 minutes; $r = 0.68$, $\Delta = 0.60$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 7.0$ E4

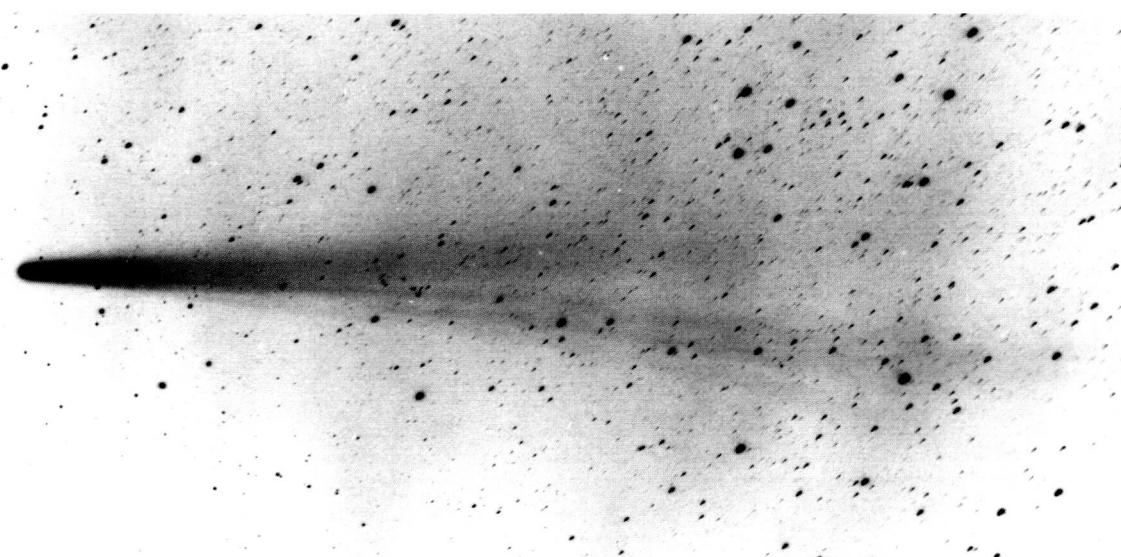


Figure 216. 1910 May 5.946; exposure 40 minutes; $r = 0.68$, $\Delta = 0.59$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 2.1$ E5

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Figure 217. 1910 May 5.951; exposure 58 minutes; $r = 0.68$, $\Delta = 0.59$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 5.0 \text{ E}4$

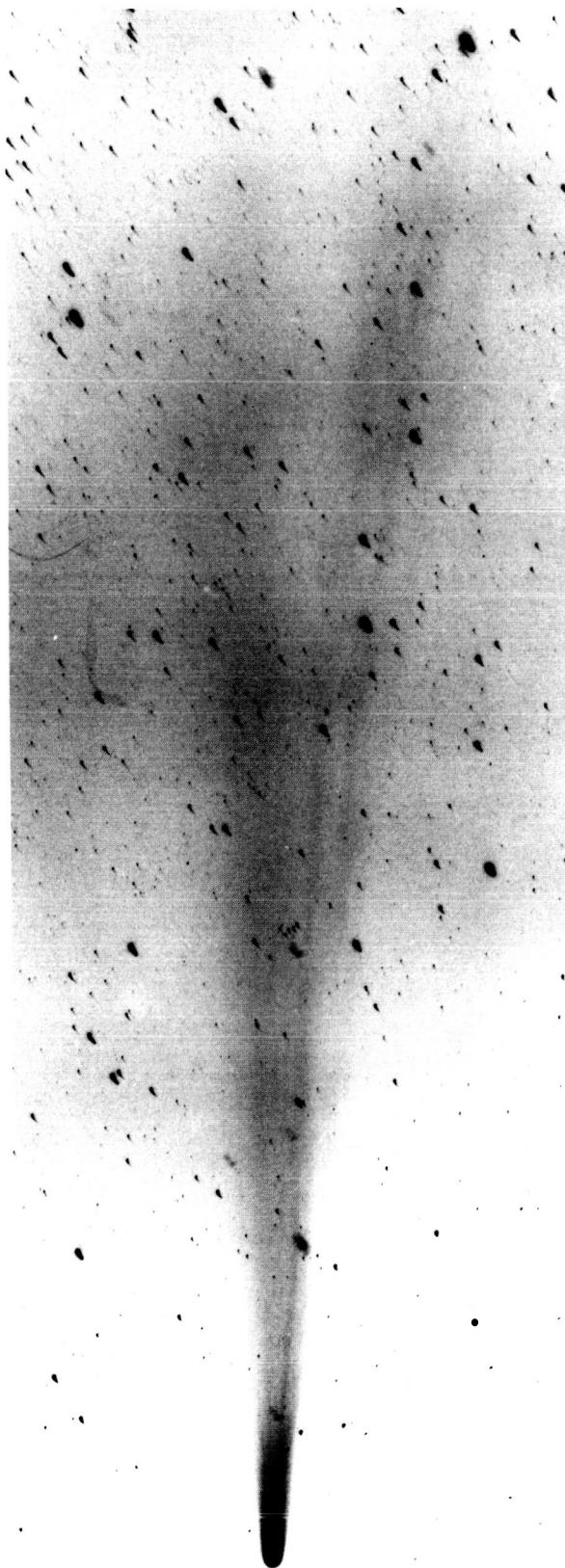


Figure 218. 1910 May 5.951; exposure 55 minutes; $r = 0.68$, $\Delta = 0.59$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 1.3 \text{ E}5$

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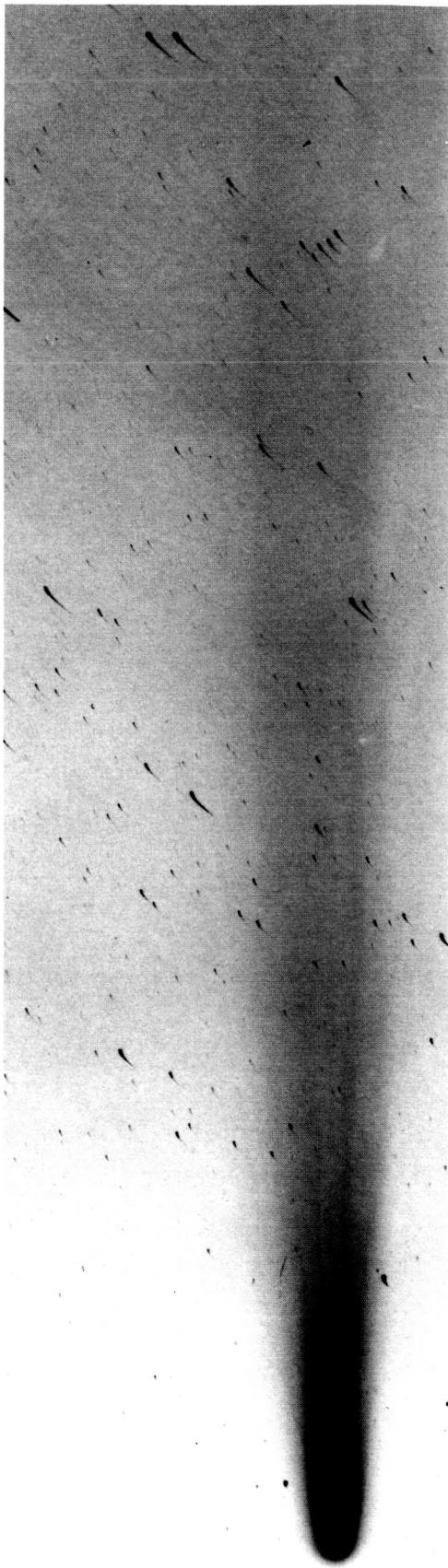


Figure 219-2. 1910 May 5.974; exposure 60 minutes; $r = 0.68$, $\Delta = 0.59$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 5.7$ E4

Figure 219-1. 1910 May 5.974; exposure 60 minutes; $r = 0.68$,
 $\Delta = 0.59$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 5.7$ E4

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Figure 220-2. 1910 May 5.974; exposure 60 minutes; $r = 0.68$, $\Delta = 0.59$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 6.8 \text{ E}4$

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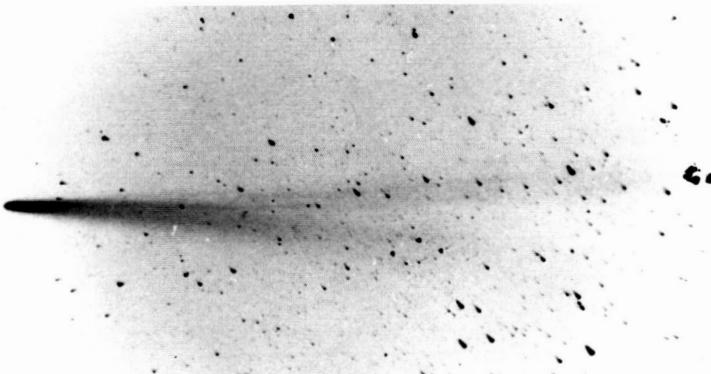


Figure 221. 1910 May 5.974; exposure 60 minutes; $r = 0.68$, $\Delta = 0.59$,
 $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 3.5 \text{ E}5$



Figure 222-1. 1910 May 5.874; exposure 25 minutes; $r = 0.68$, $\Delta = 0.60$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 1.3 \text{ E}4$

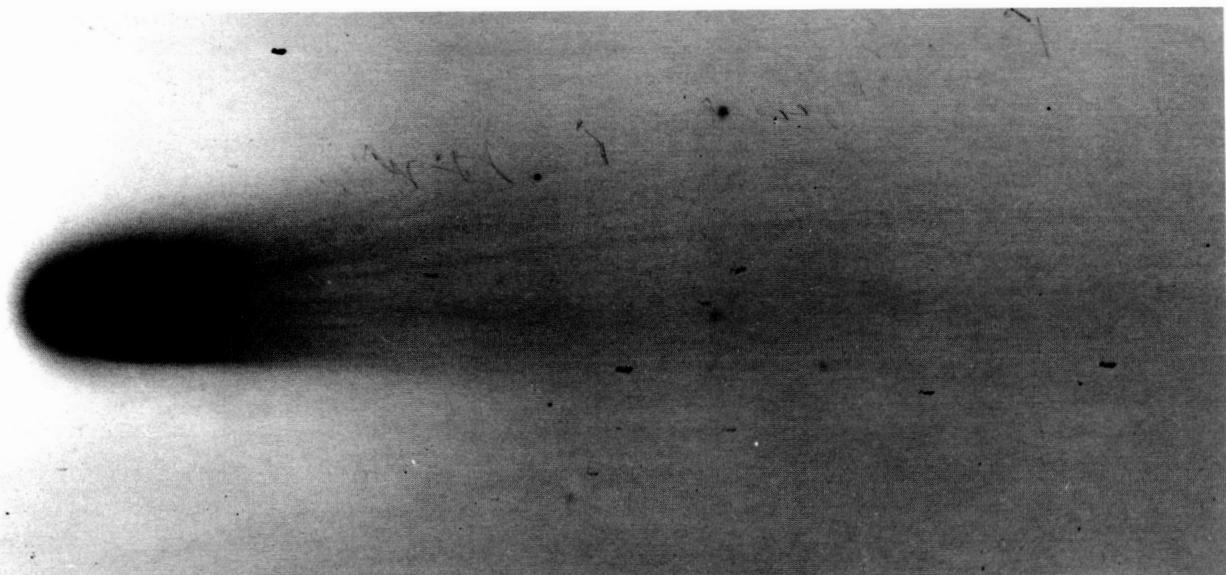


Figure 222-2. 1910 May 5.874; exposure 25 minutes; $r = 0.68$, $\Delta = 0.60$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 1.3 \text{ E}4$

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Figure 223a. 1910 May 5.892; exposure 2 minutes;
 $r = 0.68, \Delta = 0.60, \theta = 41^\circ, \alpha = 103^\circ, S = 1.3 E4$

Figure 223b. 1910 May 5.888; exposure 3 minutes;
 $r = 0.68, \Delta = 0.60, \theta = 41^\circ, \alpha = 103^\circ, S = 1.3 E4$

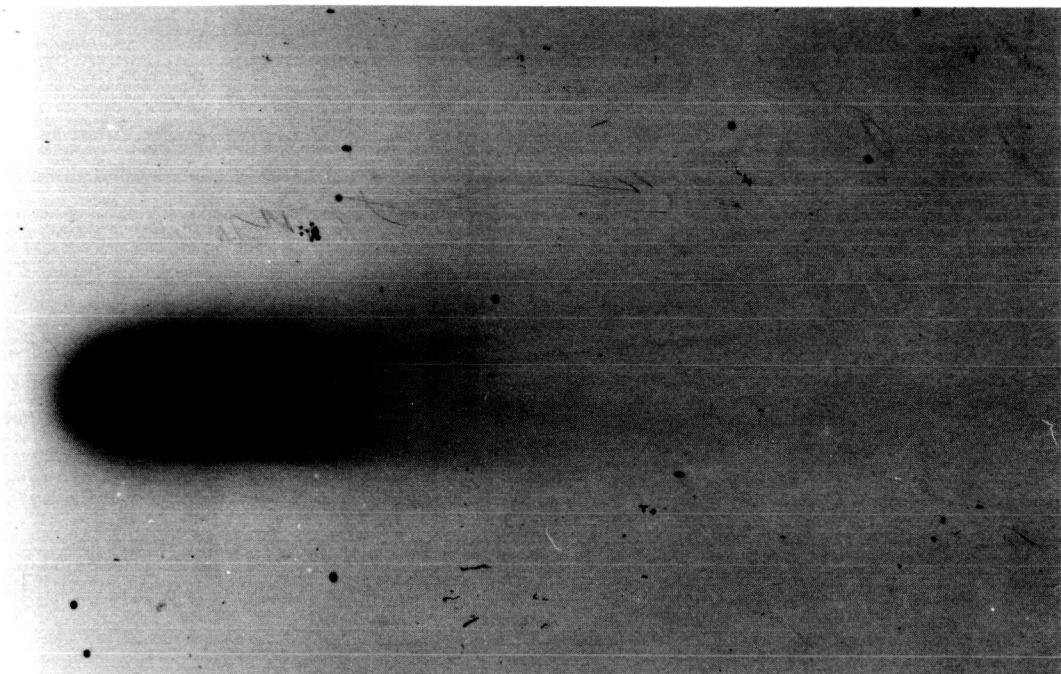


Figure 224. 1910 May 5.899; exposure 10 minutes; $r = 0.68, \Delta = 0.60, \theta = 41^\circ, \alpha = 103^\circ, S = 1.3 E4$

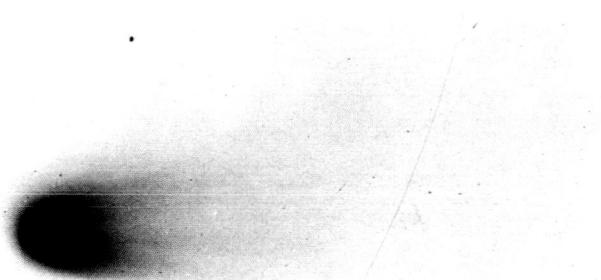


Figure 225. 1910 May 5.908; exposure 3 minutes; $r = 0.68, \Delta = 0.60, \theta = 41^\circ, \alpha = 103^\circ, S = 1.3 E4$

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Figure 226. 1910 May 5.961; exposure 21 minutes;
 $r = 0.68, \Delta = 0.59, \theta = 41^\circ, \alpha = 103^\circ, S = 8.4 \text{ E3}$

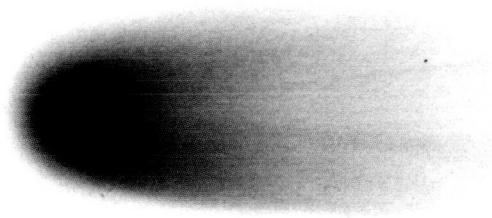


Figure 227. 1910 May 5.983; exposure 36 minutes; $r = 0.68, \Delta = 0.59, \theta = 41^\circ,$
 $\alpha = 103^\circ, S = 8.4 \text{ E3}$

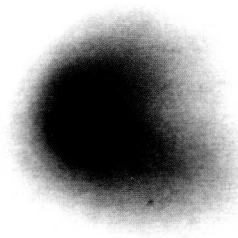


Figure 228-1. 1910 May
5.983; exposure 4
minutes; $r = 0.68, \Delta =$
 $0.59, \theta = 41^\circ, \alpha =$
 $103^\circ, S = 5.6 \text{ E3}$



Figure 228-2. 1910 May
5.983; exposure 4
minutes; $r = 0.68, \Delta =$
 $0.59, \theta = 41^\circ, \alpha =$
 $103^\circ, S = 5.6 \text{ E3}$

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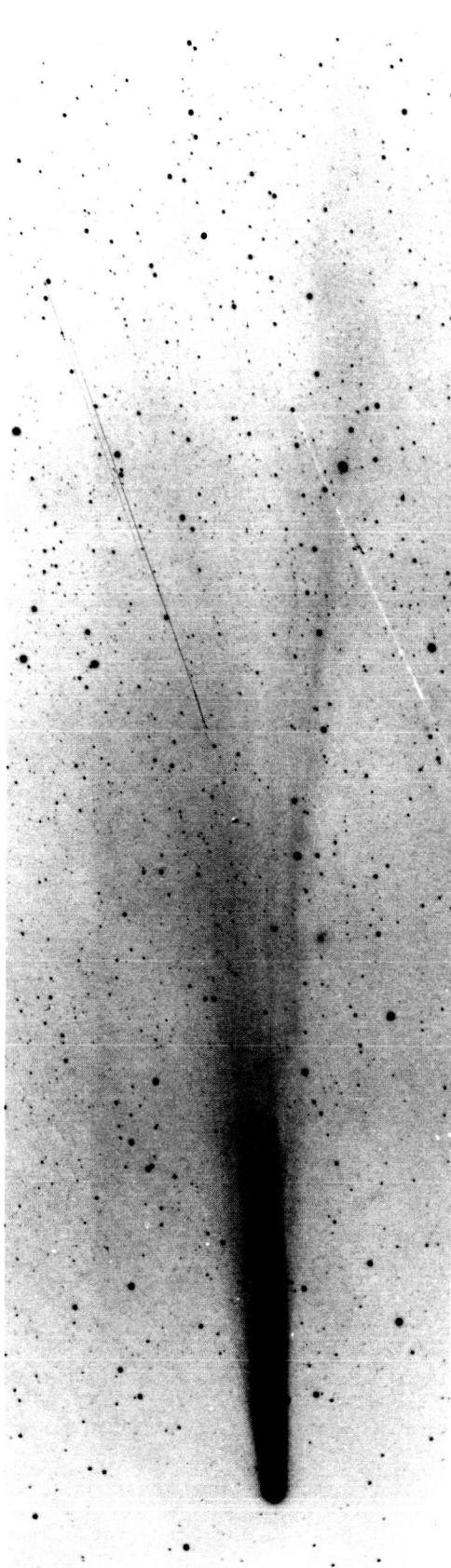


Figure 229. 1910 May 6.113; exposure 36 minutes; $r = 0.68$, $\Delta = 0.59$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 1.8 \text{ E}5$

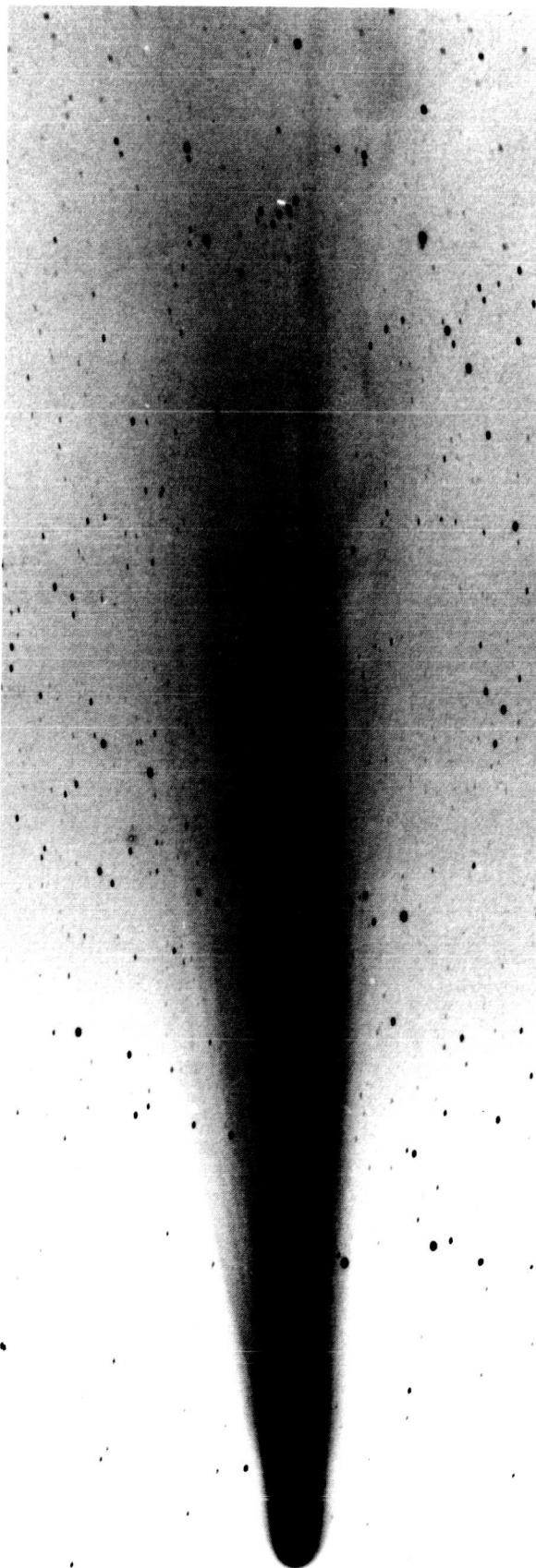


Figure 230. 1910 May 6.113; exposure 36 minutes; $r = 0.68$, $\Delta = 0.59$, $\theta = 41^\circ$, $\alpha = 103^\circ$, $S = 5.5 \text{ E}4$

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Figure 231. 1910 May 6.315; exposure 52 minutes; $r = 0.69$, $\Delta = 0.58$, $\theta = 41^\circ$, $\alpha = 104^\circ$, $S = 4.1$ E4

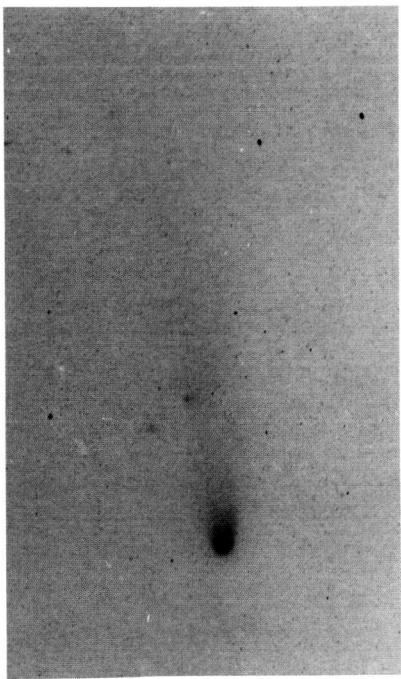


Figure 232. 1910 May 6.453; exposure 26 minutes; $r = 0.69$, $\Delta = 0.57$, $\theta = 41^\circ$, $\alpha = 105^\circ$, $S = 5.0$ E4

Figure 233. 1910 May 6.471; exposure 25 minutes; $r = 0.69$, $\Delta = 0.57$, $\theta = 41^\circ$, $\alpha = 105^\circ$, $S = 1.5$ E5

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Figure 234. 1910 May 6.846; exposure 13 minutes; $r = 0.69$,
 $\Delta = 0.56$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 2.0$ E4



Figure 235-1. 1910 May 6.886; exposure 40 minutes; $r = 0.69$, $\Delta = 0.56$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 6.6$ E4



Figure 235-2. 1910 May 6.886; exposure 40 minutes; $r = 0.69$, $\Delta = 0.56$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 6.6$ E4

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Figure 236-1. 1910 May 6.901; exposure 90 minutes; $r = 0.69$, $\Delta = 0.56$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 5.7$ E4

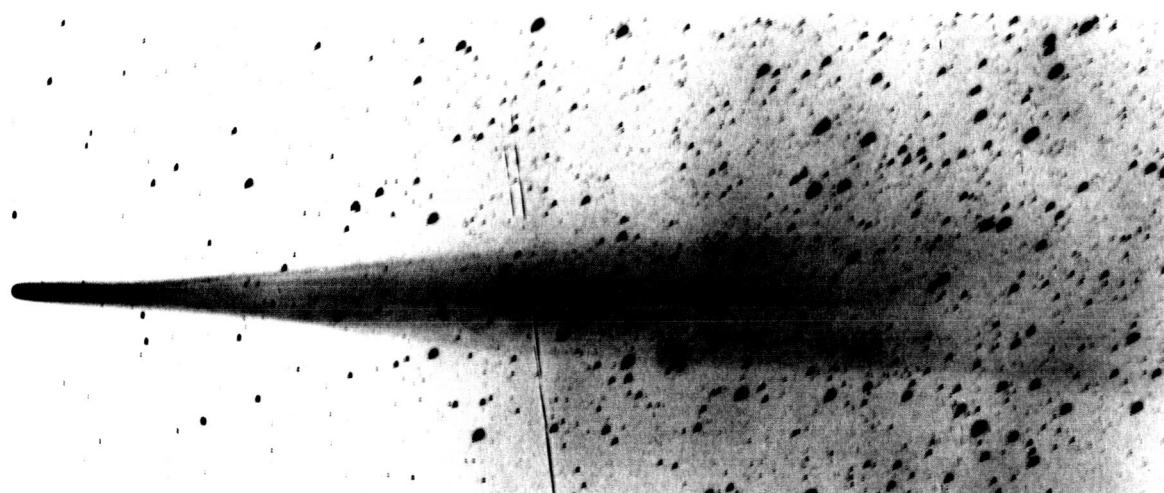


Figure 236-2. 1910 May 6.901; exposure 90 minutes; $r = 0.69$, $\Delta = 0.56$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 5.7$ E4

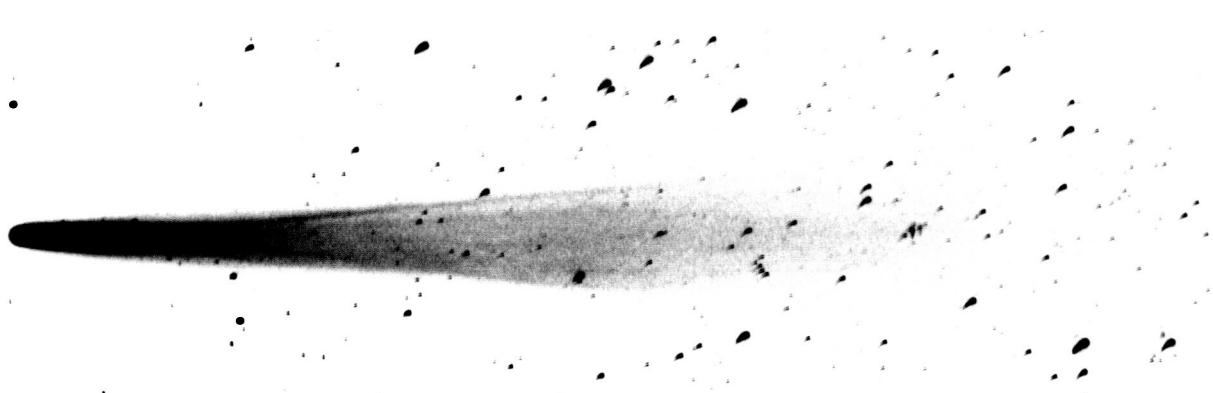


Figure 237. 1910 May 6.944; exposure 45 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 2.0$ E5

Figure 239. 1910 May 6.949; exposure 60 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 1.2$ E5

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90 minutes; $r = 0.69$, $\Delta = 0.56$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 5.7 \text{ E}4$



Figure 238. 1910 May 6.947; exposure 52 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 2.0 \text{ E}5$



Figure 240. 1910 May 6.964; exposure 28 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 4.7 \text{ E}4$

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Figure 241-1. 1910 May 6.875; exposure 25 minutes; $r = 0.69$, $\Delta = 0.56$,
 $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 1.2 \text{ E}4$

Figure 241-2. 1910 May 6.875; exposure 25 minutes; $r = 0.69$, $\Delta = 0.56$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 1.2 \text{ E}4$

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Figure 242a. 1910 May 6.892; exposure 2 minutes;
 $r = 0.69, \Delta = 0.56, \theta = 41^\circ, \alpha = 106^\circ, S = 1.2 E4$



Figure 242b. 1910 May 6.890; exposure 3 minutes;
 $r = 0.69, \Delta = 0.56, \theta = 41^\circ, \alpha = 106^\circ, S = 1.2 E4$



Figure 243. 1910 May 6.900; exposure 10 minutes; $r = 0.69, \Delta = 0.56, \theta = 41^\circ, \alpha = 106^\circ, S = 1.2 E4$

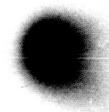


Figure 244. 1910 May 6.907; exposure 3 minutes;
 $r = 0.69, \Delta = 0.56, \theta = 41^\circ, \alpha = 106^\circ, S = 1.2 E4$

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Figure 245. 1910 May 6.979; exposure 3 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 7.5$ E3

Figure 246. 1910 May 6.992; exposure 17 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 7.9$ E3

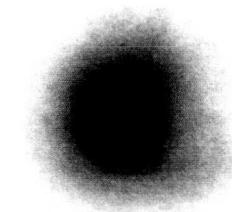


Figure 247-1. 1910 May 6.993; exposure 4 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 5.6$ E3

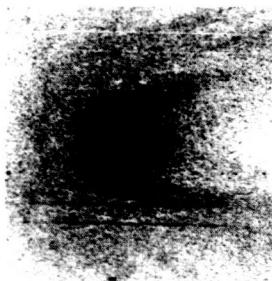


Figure 247-2. 1910 May 6.993; exposure 4 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 106^\circ$, $S = 5.6$ E3

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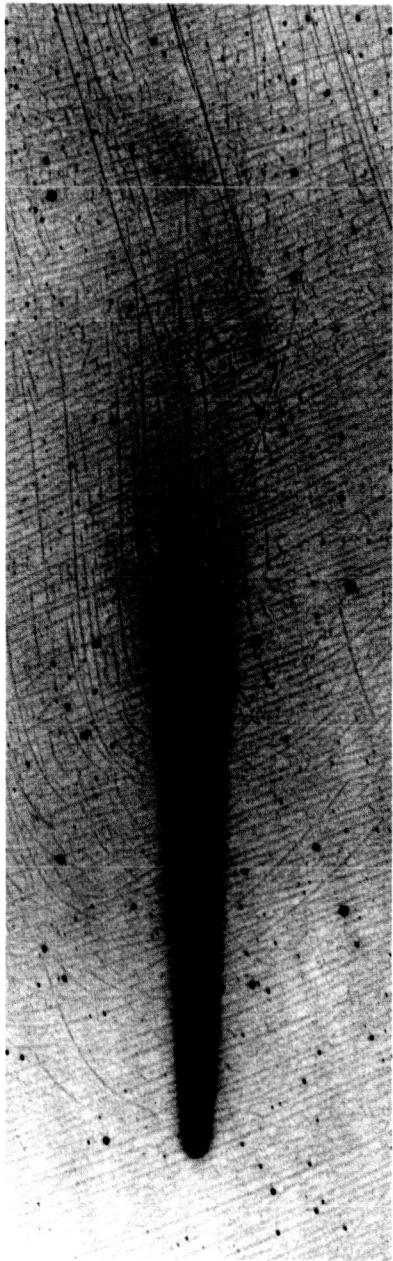


Figure 248. 1910 May 7.118; exposure 15 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 107^\circ$, $S = 1.6 \text{ E}5$

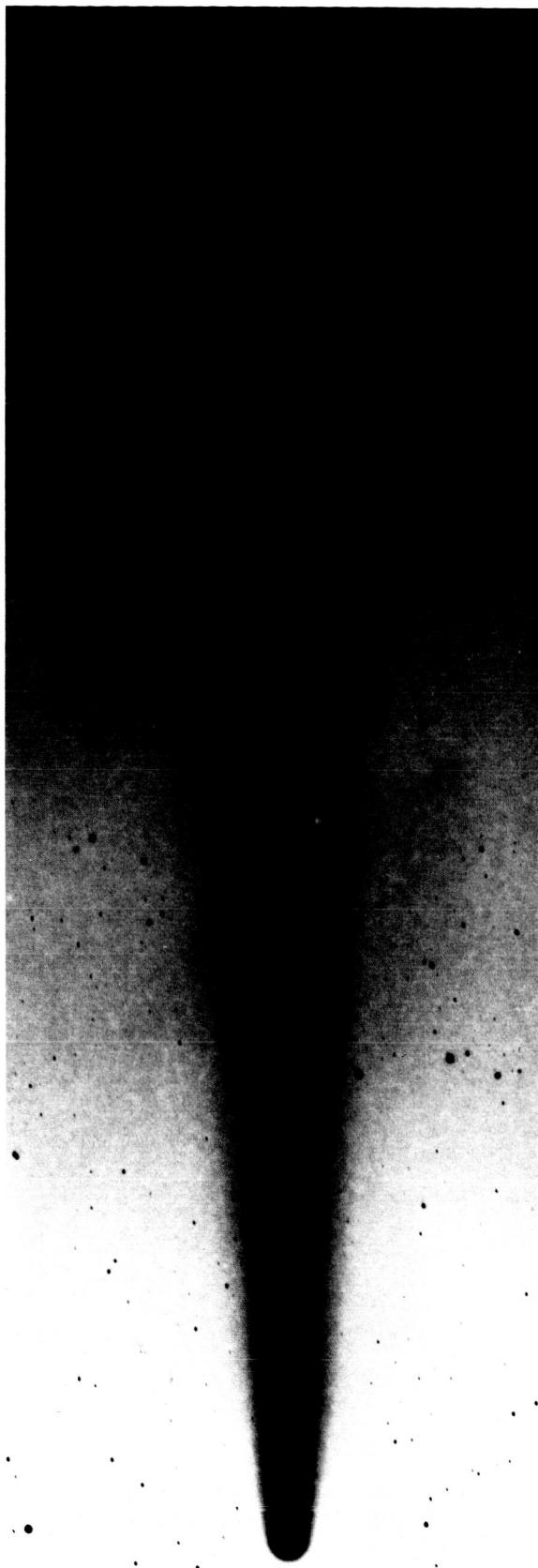


Figure 249. 1910 May 7.118; exposure 15 minutes; $r = 0.69$, $\Delta = 0.55$, $\theta = 41^\circ$, $\alpha = 107^\circ$, $S = 5.1 \text{ E}4$

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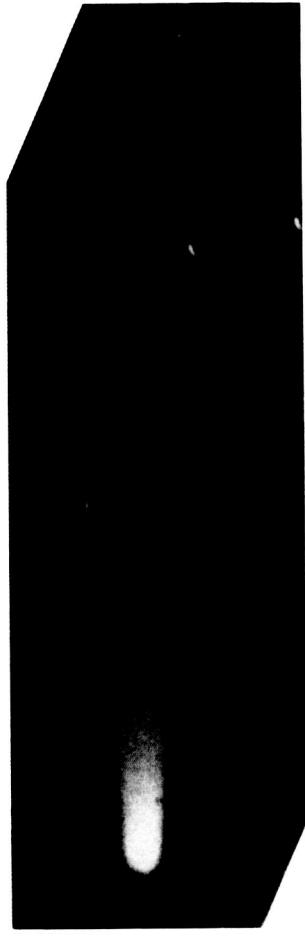


Figure 250. 1910 May 7.299; exposure 49 minutes; $r = 0.70$, $\Delta = 0.54$, $\theta = 41^\circ$, $\alpha = 107^\circ$, $S = 1.7 \text{ E}5$



Figure 251. 1910 May 7.301; exposure 58 minutes; $r = 0.70$, $\Delta = 0.54$, $\theta = 41^\circ$, $\alpha = 107^\circ$, $S = 4.6 \text{ E}4$

Figure 252. 1910 May 7.318; exposure 45 minutes; $r = 0.70$, $\Delta = 0.54$, $\theta = 41^\circ$, $\alpha = 107^\circ$, $S = 3.8 \text{ E}4$



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Figure 253-1. 1910 May 7.879; exposure 38 minutes; $r = 0.70$,
 $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 5.3$ E4

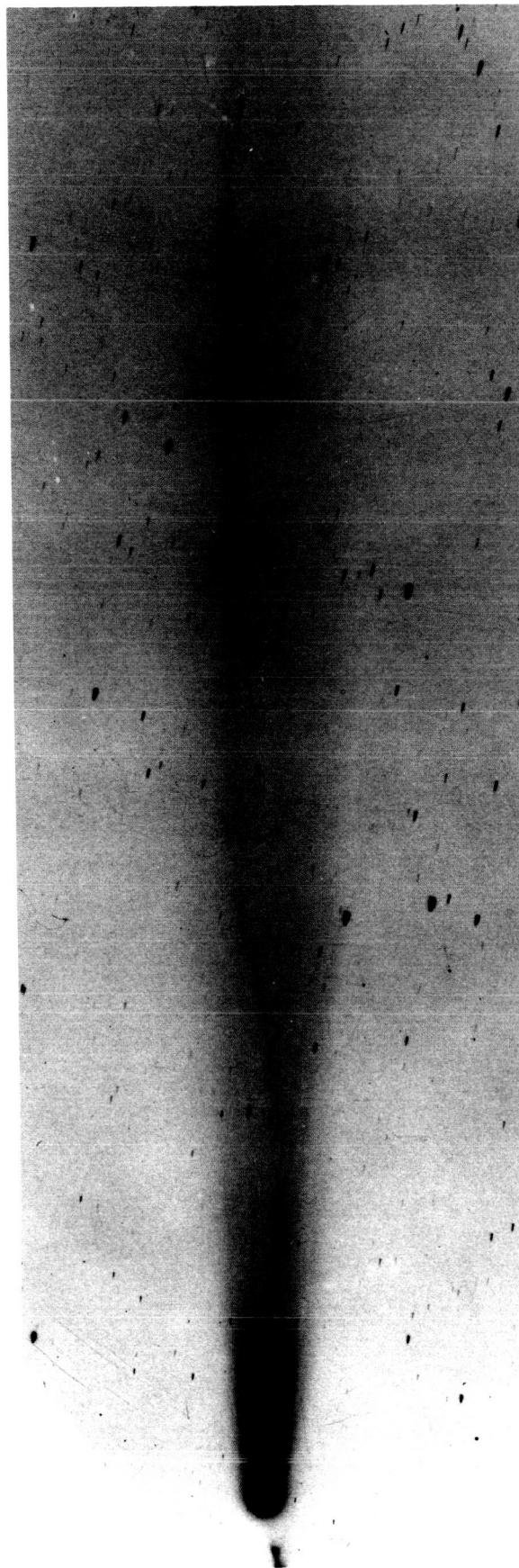


Figure 253-2. 1910 May 7.879, exposure 38 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 5.3$ E4

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Figure 254-1. 1910 May 7.894; exposure 20 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$,
 $\alpha = 109^\circ$, $S = 3.4 \text{ E}4$



Figure 254-2. 1910 May 7.894; exposure 20 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 3.4 \text{ E}4$

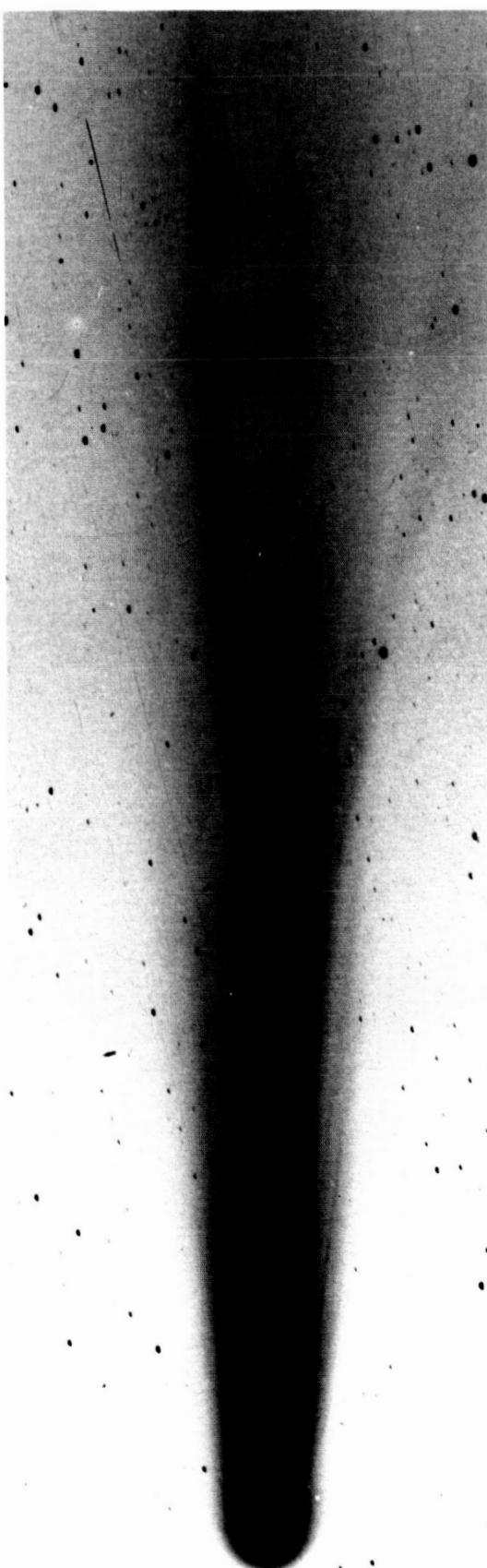


Figure 254-3. 1910 May 7.894; exposure 20 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 3.4 \text{ E}4$

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Figure 255-1. 1910 May 7.913; exposure 45 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$,
 $\alpha = 109^\circ$, $S = 5.3$ E4

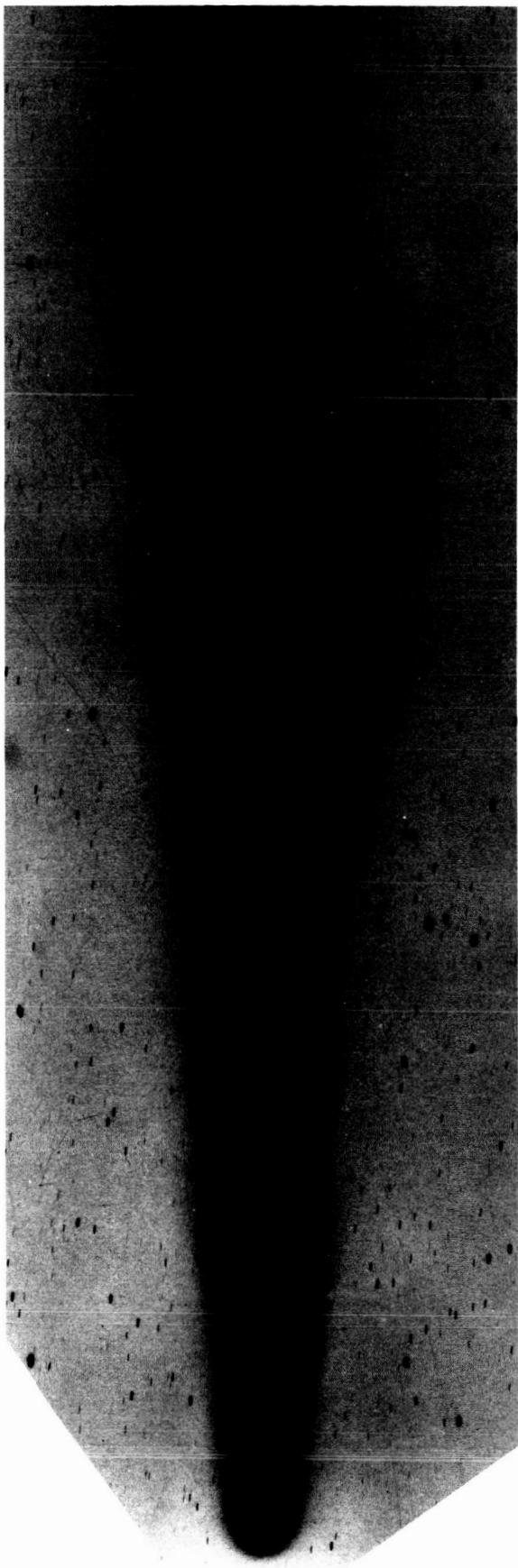


Figure 255-2. 1910 May 7.913; exposure 45 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 5.3$ E4

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Figure 256-1. 1910 May 7.945; exposure 41 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 1.8 \text{ E}5$

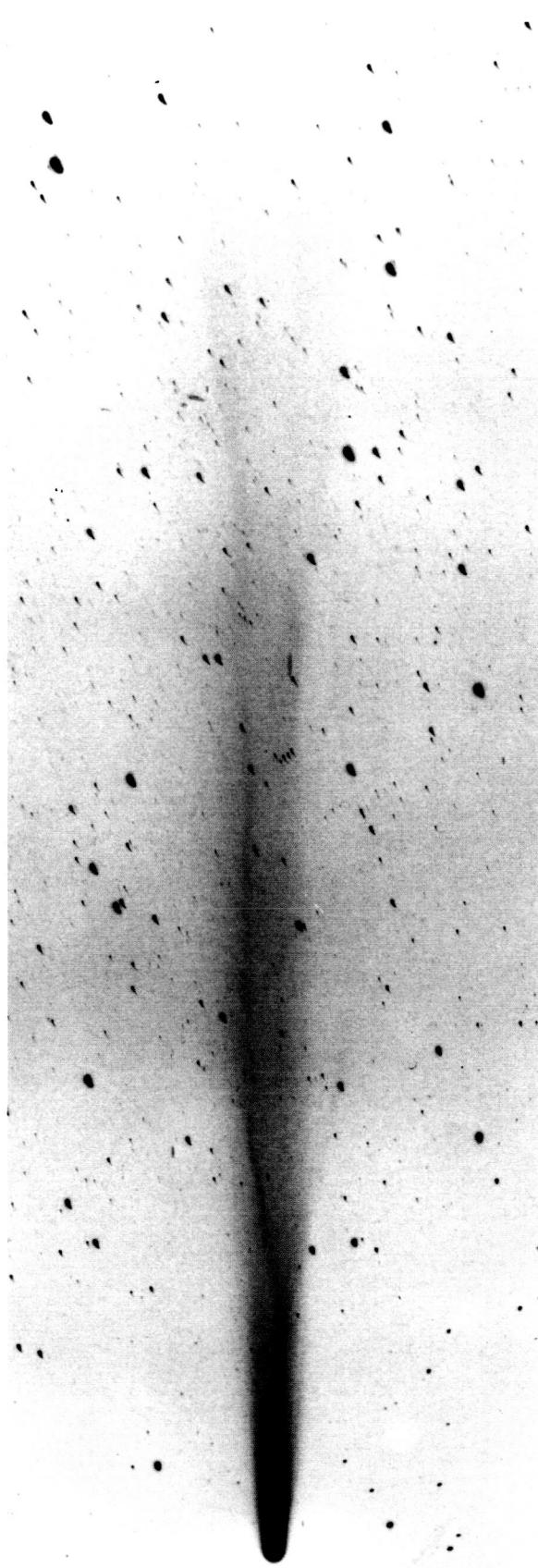


Figure 256-2. 1910 May 7.945; exposure 41 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 1.8 \text{ E}5$

Figure 257. 1910 May 7.951; exposure 51 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 1.1 \text{ E}5$

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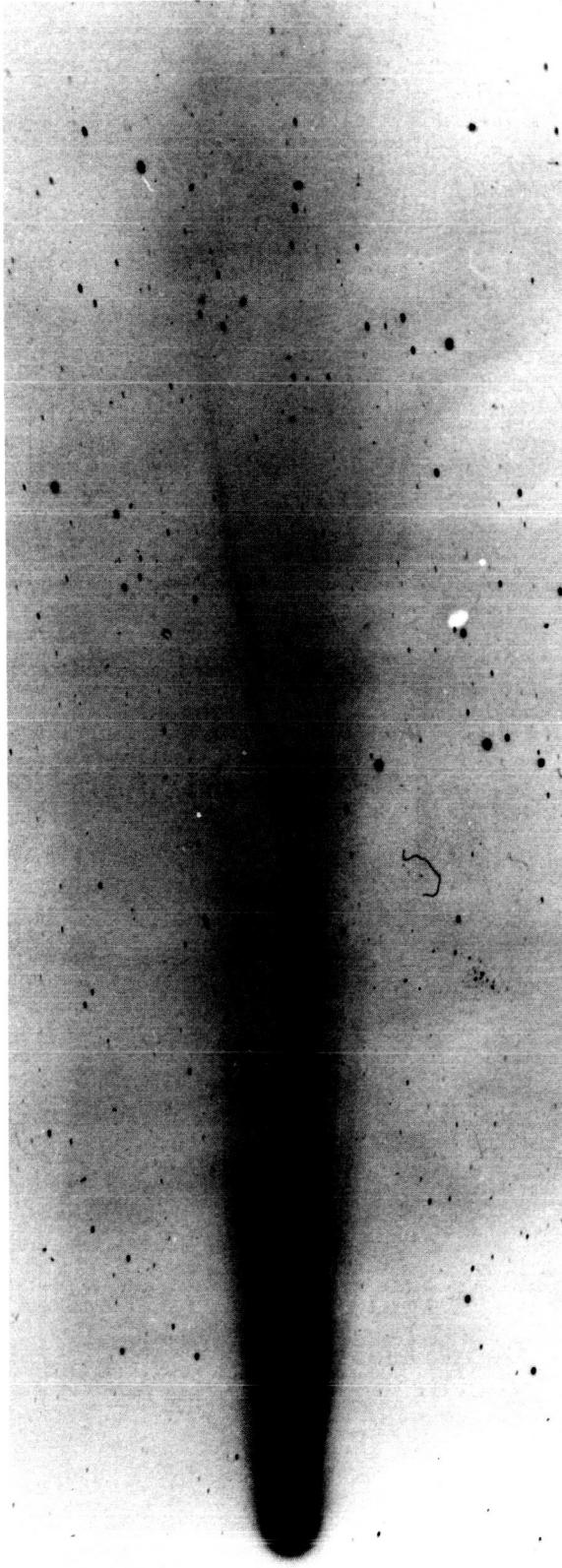


Figure 258. 1910 May 7.964; exposure 24 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 4.4 \text{ E}4$



Figure 259. 1910 May 7.878; exposure 25 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 1.1 \text{ E}4$

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Figure 260a-1. 1910 May 7.894; exposure 2 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 1.1$ E4



Figure 260a-2. 1910 May 7.894; exposure 2 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 1.1$ E4

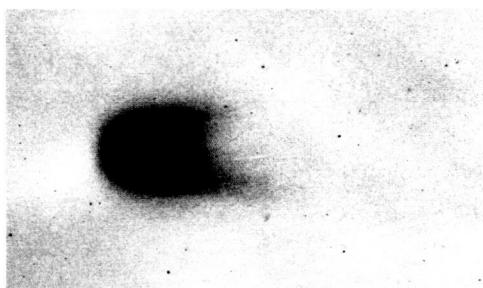


Figure 260b-1. 1910 May 7.891; exposure 3 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 1.1$ E4

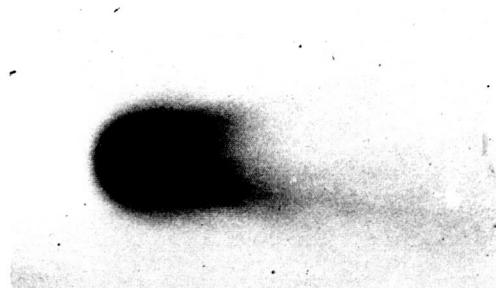


Figure 260b-2. 1910 May 7.891; exposure 3 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 1.1$ E4

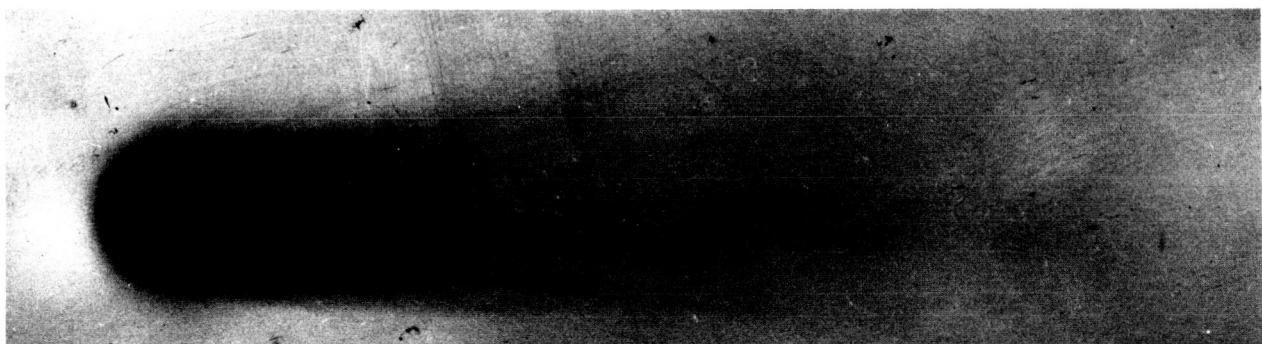


Figure 261. 1910 May 7.903; exposure 10 minutes; $r = 0.70$, $\Delta = 0.52$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 1.1$ E4



Figure 262a. 1910 May 7.967; exposure 0.33 minute; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 7.0$ E3

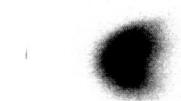


Figure 262b. 1910 May 7.967; exposure 1 minute; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 7.0$ E3



Figure 262c. 1910 May 7.970; exposure 3 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 7.0$ E3



Figure 262d. 1910 May 7.972; exposure 4.50 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, $S = 7.0$ E3

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Figure 263-1. 1910 May 7.972; exposure 30 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, S = 7.3 E3

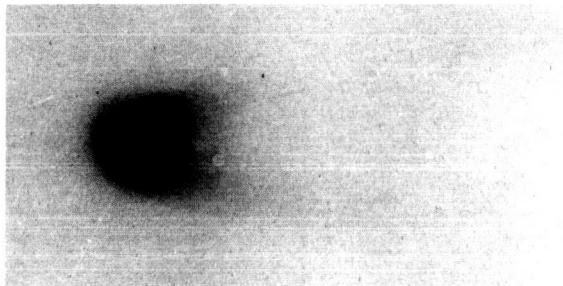


Figure 263-2. 1910 May 7.972; exposure 30 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, S = 7.3 E3

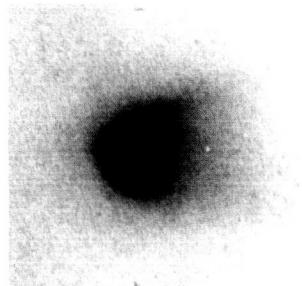


Figure 264. 1910 May 7.980; exposure 2 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, S = 7.0 E3

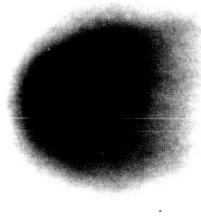


Figure 265-1. 1910 May 7.989; exposure 8 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, S = 5.6 E3



Figure 265-2. 1910 May 7.989; exposure 8 minutes; $r = 0.70$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 109^\circ$, S = 5.6 E3

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Figure 266. 1910 May 8.103; exposure 50 minutes; $r = 0.71$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 110^\circ$, $S = 4.7 \text{ E}4$

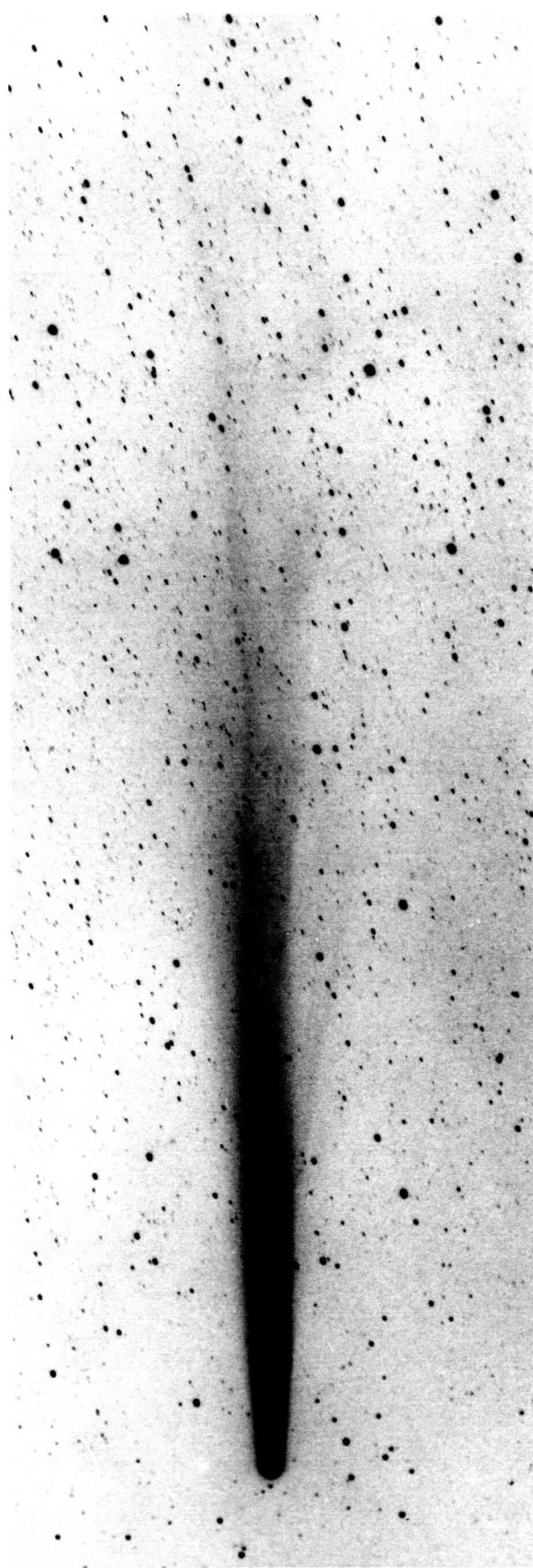


Figure 267. 1910 May 8.104; exposure 55 minutes; $r = 0.71$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 110^\circ$, $S = 1.5 \text{ E}5$

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Figure 268-1. 1910 May 8.126; exposure 11 minutes; $r = 0.71$,
 $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 110^\circ$, $S = 4.7 \text{ E}4$

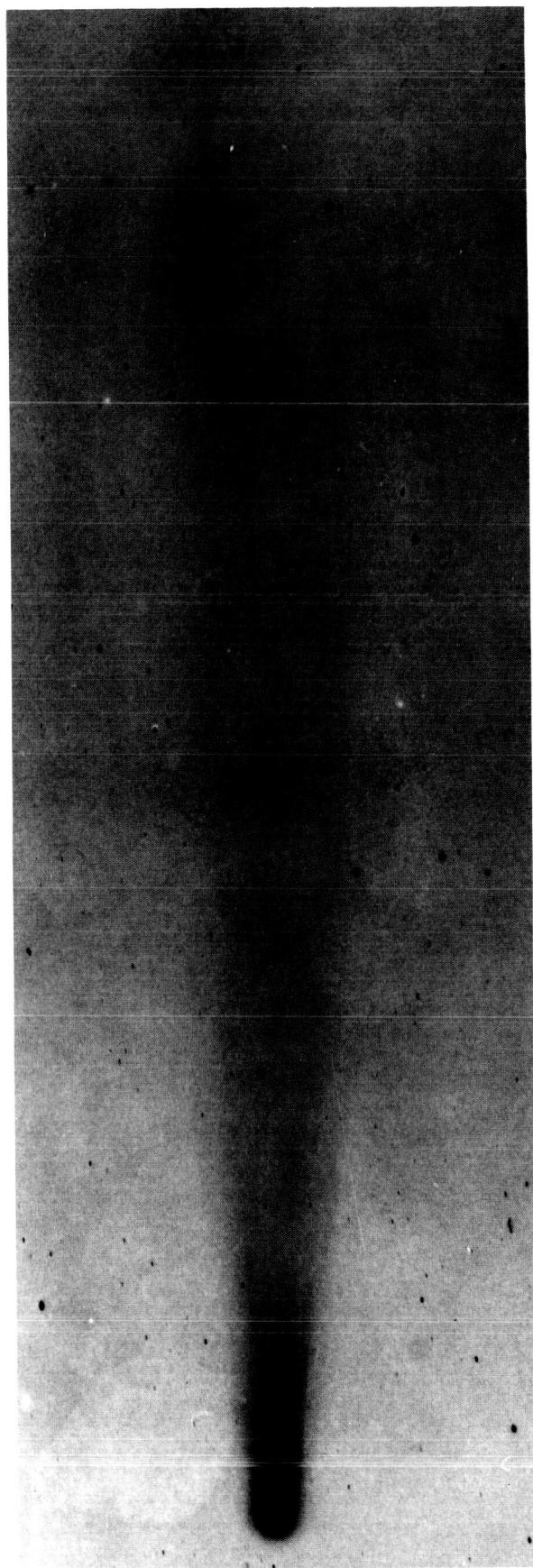


Figure 268-2. 1910 May 8.126; exposure 11 minutes; $r = 0.71$, $\Delta = 0.51$, $\theta = 41^\circ$, $\alpha = 110^\circ$, $S = 4.7 \text{ E}4$

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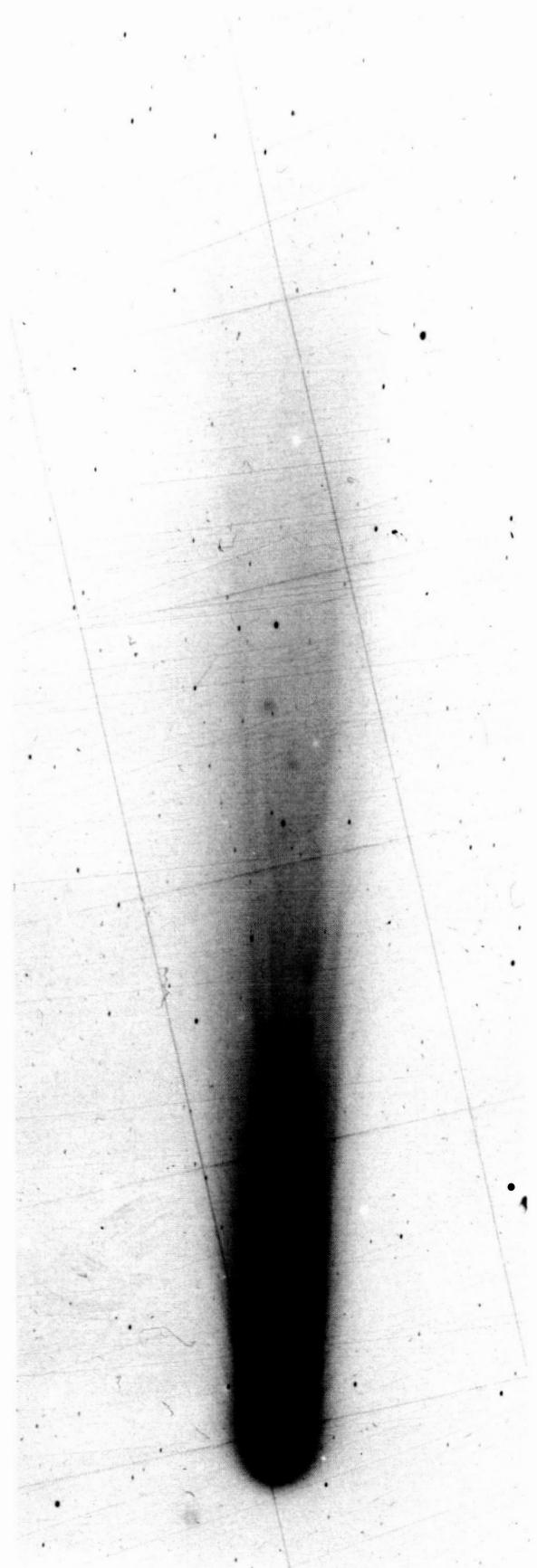


Figure 269. 1910 May 8.636; exposure 15 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 112^\circ$, $S = 3.2$ E4

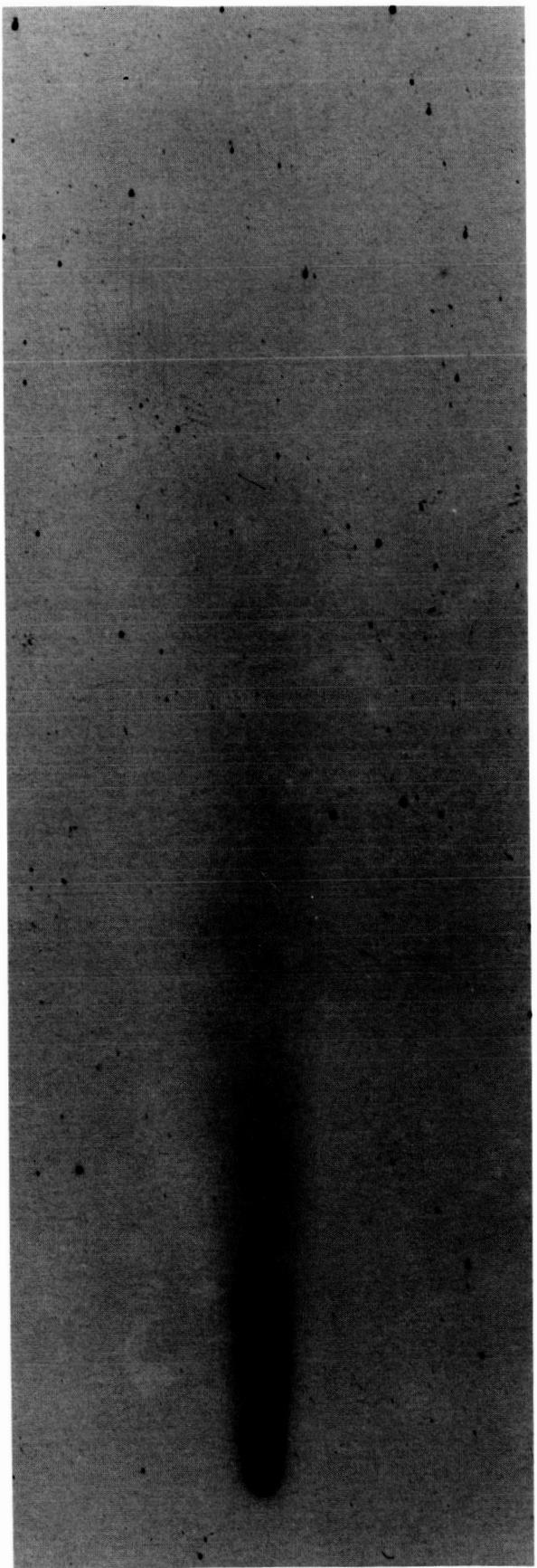


Figure 270. 1910 May 8.859; exposure 15 minutes; $r = 0.71$, $\Delta = 0.48$, $\theta = 41^\circ$, $\alpha = 112^\circ$, $S = 5.6$ E4

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Figure 271. 1910 May 8.938; exposure 24 minutes; $r = 0.72$, $\Delta = 0.48$, $\theta = 41^\circ$,
 $\alpha = 113^\circ$, $S = 4.0 \text{ E}4$

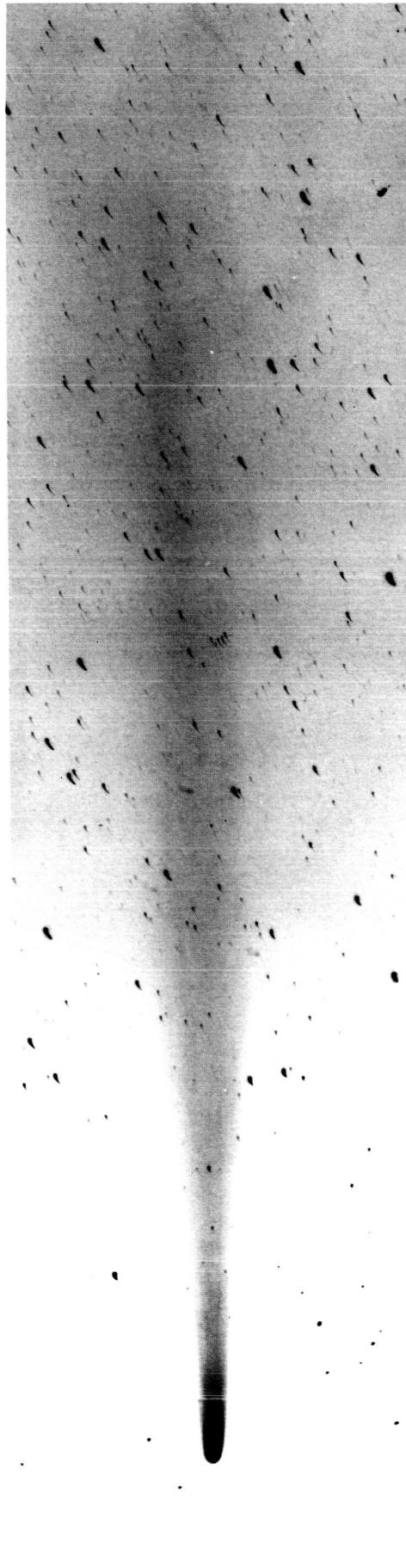


Figure 272. 1910 May 8.949; exposure 57 minutes; $r = 0.72$, $\Delta = 0.48$, $\theta = 41^\circ$, $\alpha = 113^\circ$, $S = 1.0 \text{ E}5$

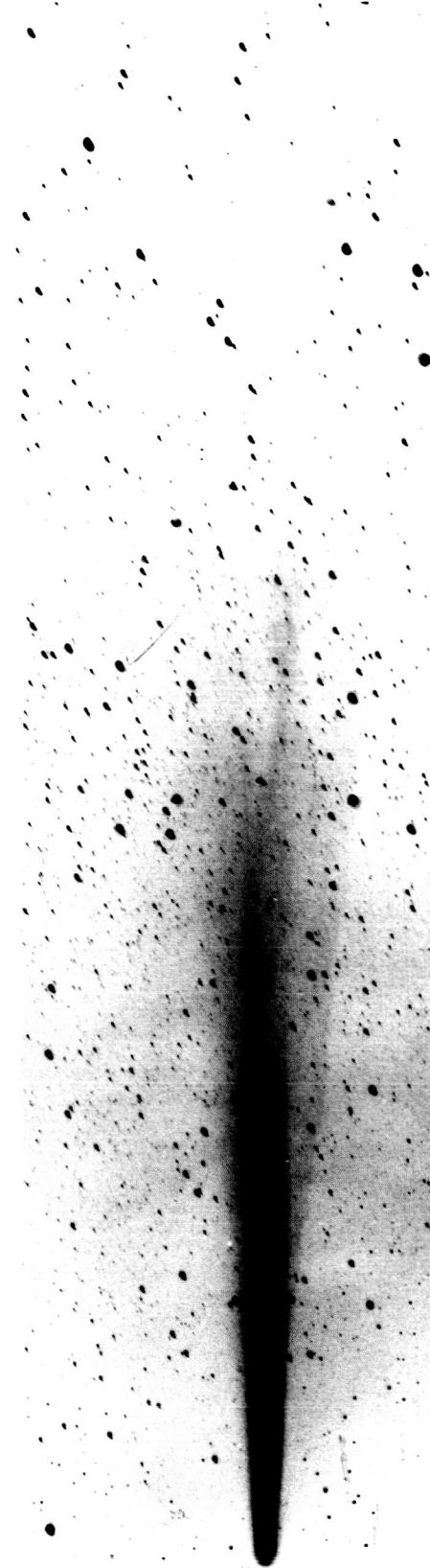


Figure 273. 1910 May 8.949; exposure 55 minutes; $r = 0.72$, $\Delta = 0.48$, $\theta = 41^\circ$, $\alpha = 113^\circ$, $S = 2.0 \text{ E}5$

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Figure 274-1. 1910 May 8.551; exposure 5 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1 \text{ E}4$

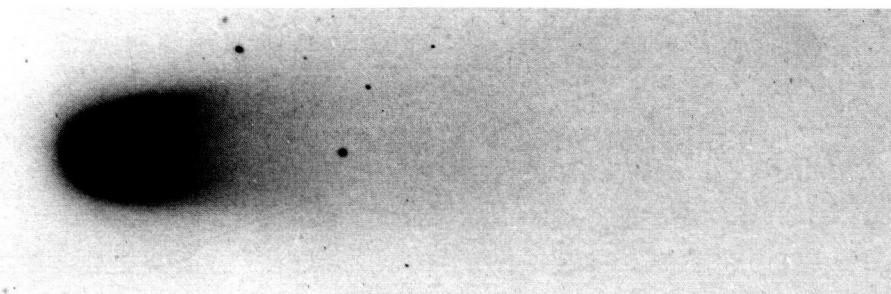


Figure 274-2. 1910 May 8.551; exposure 5 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1 \text{ E}4$



Figure 275-1. 1910 May 8.557; exposure 5 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1 \text{ E}4$

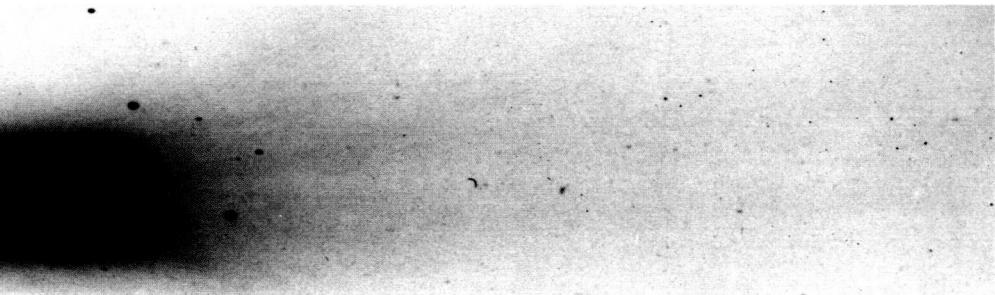


Figure 275-2. 1910 May 8.557; exposure 5 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1 \text{ E}4$

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Figure 276-1. 1910 May 8.565; exposure 2 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$,
 $\alpha = 111^\circ$, $S = 1.1$ E4

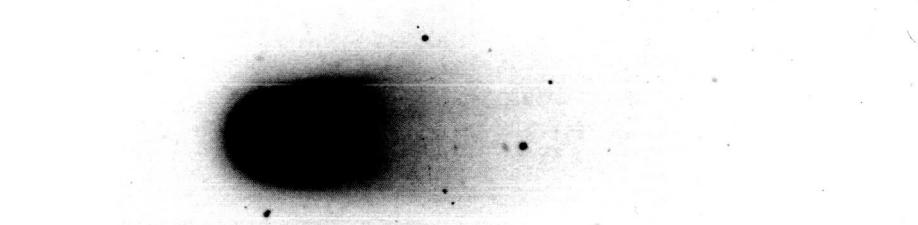


Figure 276-2. 1910 May 8.565; exposure 2 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$,
 $\alpha = 111^\circ$, $S = 1.1$ E4



Figure 277-1. 1910 May 8.572; exposure 8 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1$ E4

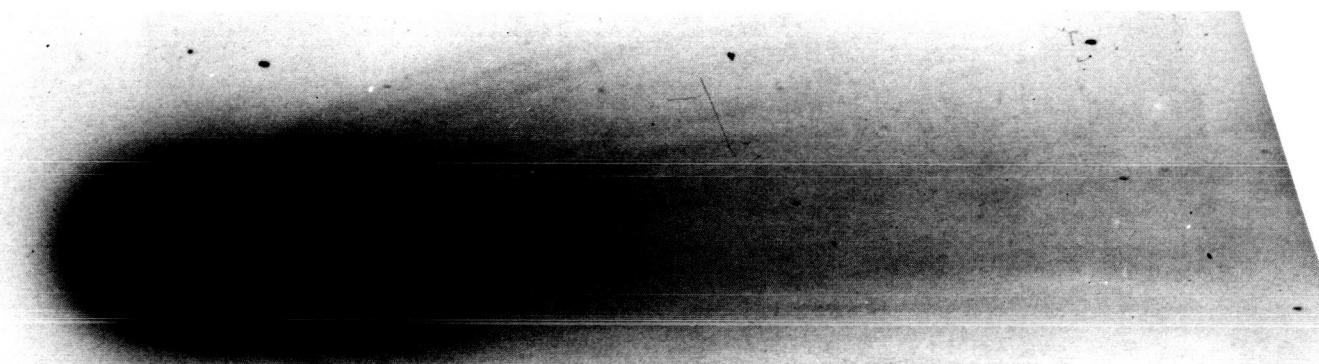


Figure 277-2. 1910 May 8.572; exposure 8 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1$ E4

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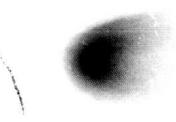


Figure 278-1. 1910 May 8.578; exposure 0.50 minute; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1 \text{ E}4$

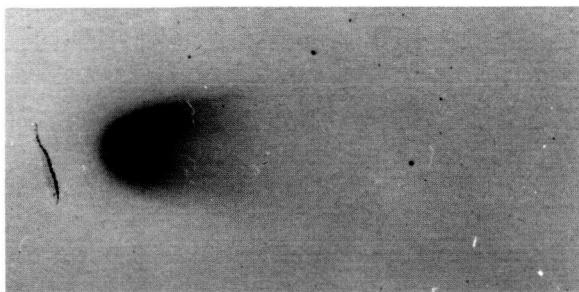


Figure 278-2. 1910 May 8.578; exposure 0.50 minute; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1 \text{ E}4$



Figure 279-1. 1910 May 8.580; exposure 2 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1 \text{ E}4$

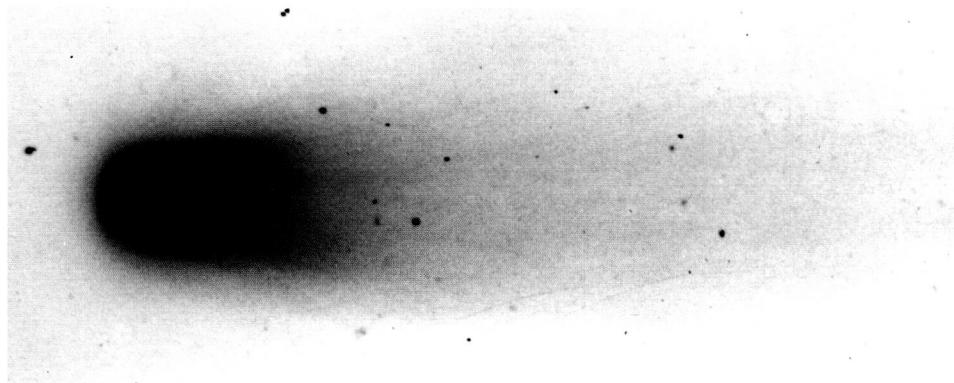


Figure 279-2. 1910 May 8.580; exposure 2 minutes; $r = 0.71$, $\Delta = 0.49$, $\theta = 41^\circ$, $\alpha = 111^\circ$, $S = 1.1 \text{ E}4$

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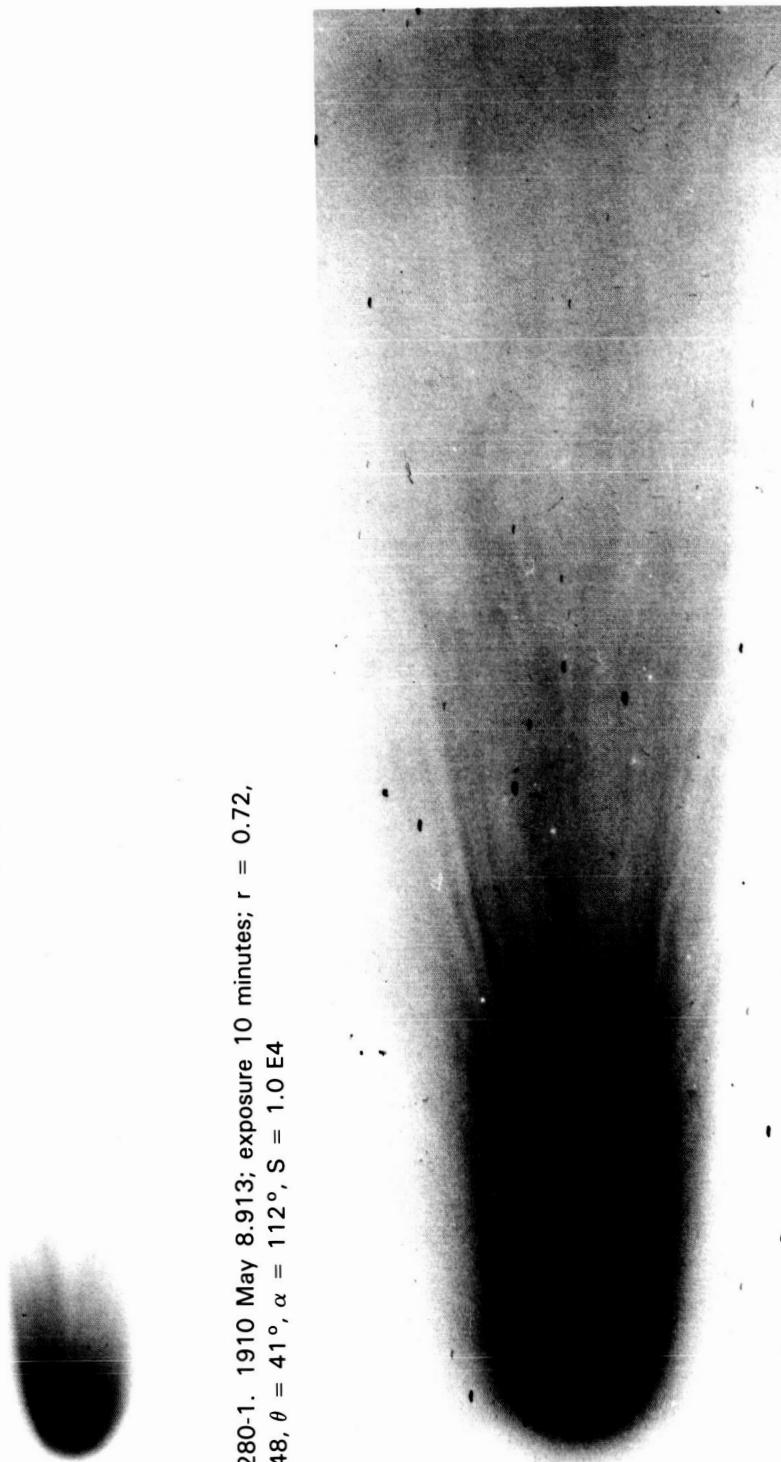


Figure 280-1. 1910 May 8.913; exposure 10 minutes; $r = 0.72$,
 $\Delta = 0.48$, $\theta = 41^\circ$, $\alpha = 112^\circ$, $S = 1.0 E4$

Figure 280-2. 1910 May 8.913; exposure 10 minutes; $r = 0.72$, $\Delta = 0.48$, $\theta = 41^\circ$, $\alpha = 112^\circ$, $S = 1.0 E4$

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Figure 281. 1910 May 8.961; exposure 9 minutes; $r = 0.72$, $\Delta = 0.48$, $\theta = 41^\circ$, $\alpha = 113^\circ$, $S = 6.4 \text{ E}3$

•

Figure 282a. 1910 May 8.970; exposure 0.50 minute; $r = 0.72$, $\Delta = 0.47$, $\theta = 41^\circ$, $\alpha = 113^\circ$, $S = 6.4 \text{ E}3$

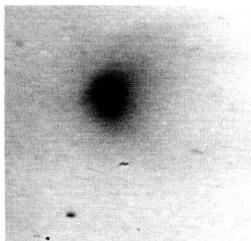


Figure 282b. 1910 May 8.970; exposure 1 minute; $r = 0.72$, $\Delta = 0.47$, $\theta = 41^\circ$, $\alpha = 113^\circ$, $S = 6.4 \text{ E}3$

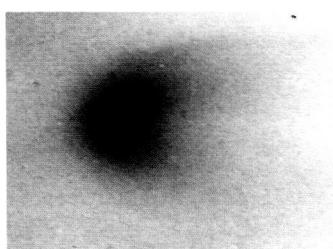


Figure 282c. 1910 May 8.972; exposure 2 minutes; $r = 0.72$, $\Delta = 0.47$, $\theta = 41^\circ$, $\alpha = 113^\circ$, $S = 6.4 \text{ E}3$

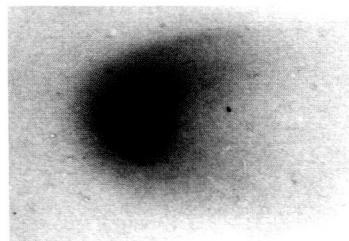


Figure 282d. 1910 May 8.973; exposure 3 minutes; $r = 0.72$, $\Delta = 0.47$, $\theta = 41^\circ$, $\alpha = 113^\circ$, $S = 6.4 \text{ E}3$

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Figure 283-1. 1910 May
8.987; exposure 8
minutes; $r = 0.72$, $\Delta =$
 0.47 , $\theta = 41^\circ$, $\alpha =$
 113° , $S = 5.6$ E3



Figure 283-2. 1910 May
8.987; exposure 8
minutes; $r = 0.72$, $\Delta =$
 0.47 , $\theta = 41^\circ$, $\alpha =$
 113° , $S = 5.6$ E3

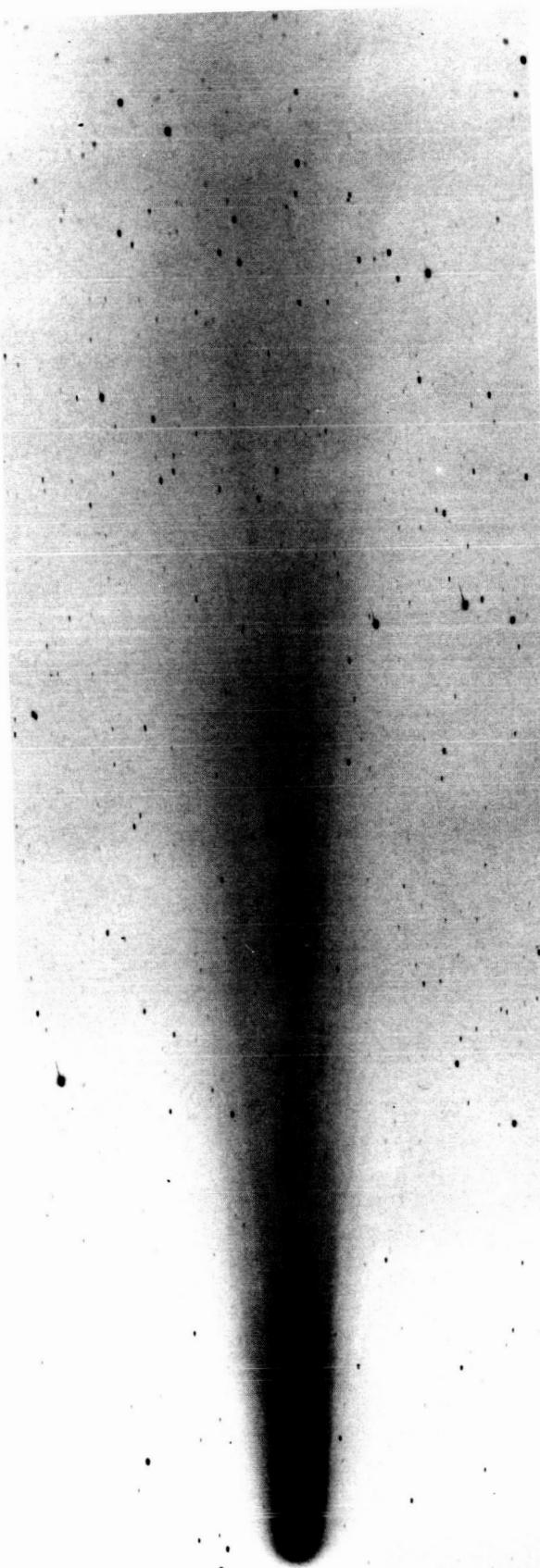


Figure 284. 1910 May 9.117; exposure 20 minutes; $r = 0.72$, $\Delta = 0.47$, $\theta = 41^\circ$, $\alpha = 113^\circ$, $S = 1.4$ E5

Figure 285. 1910 May 9.118; exposure 24 minutes; $r = 0.72$, $\Delta = 0.47$, $\theta = 41^\circ$, $\alpha = 113^\circ$, $S = 4.4$ E4

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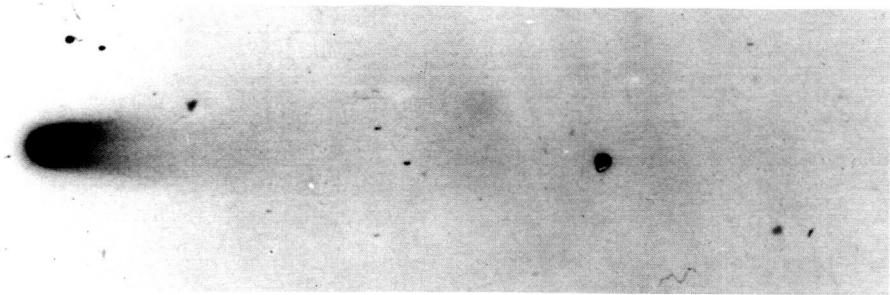


Figure 286. 1910 May 9.297; exposure 16 minutes; $r = 0.72$, $\Delta = 0.46$, $\theta = 40^\circ$, $\alpha = 114^\circ$, $S = 3.3$ E4

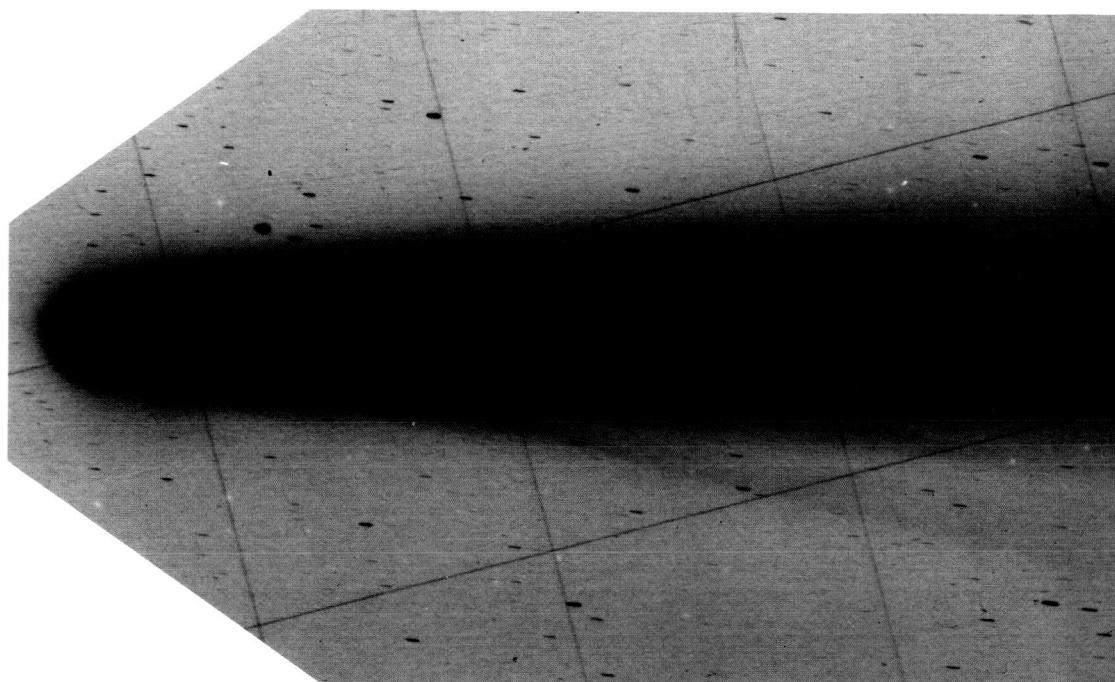


Figure 287. 1910 May 9.606; exposure 31 minutes; $r = 0.72$, $\Delta = 0.45$, $\theta = 40^\circ$, $\alpha = 115^\circ$,

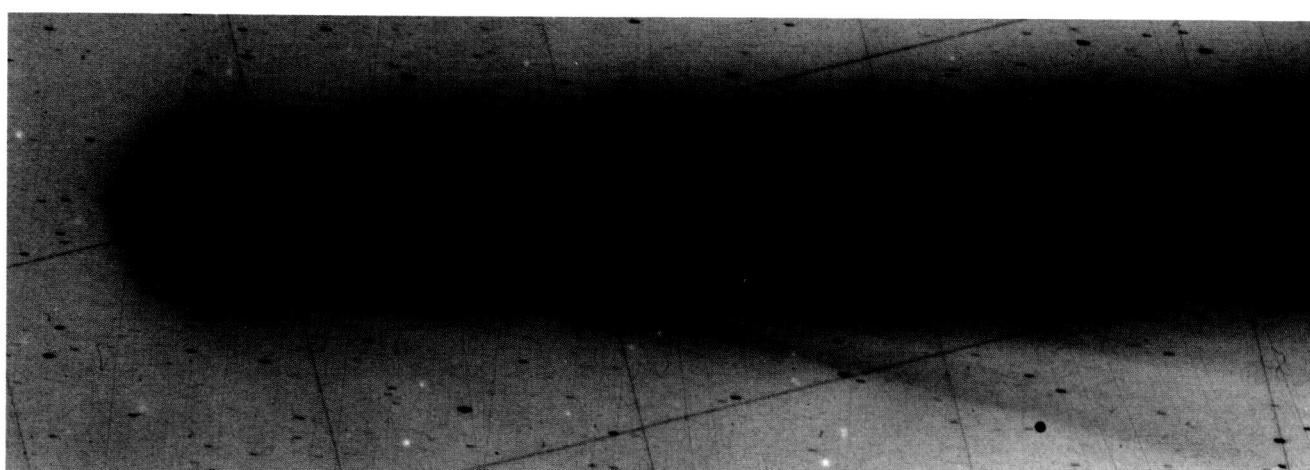
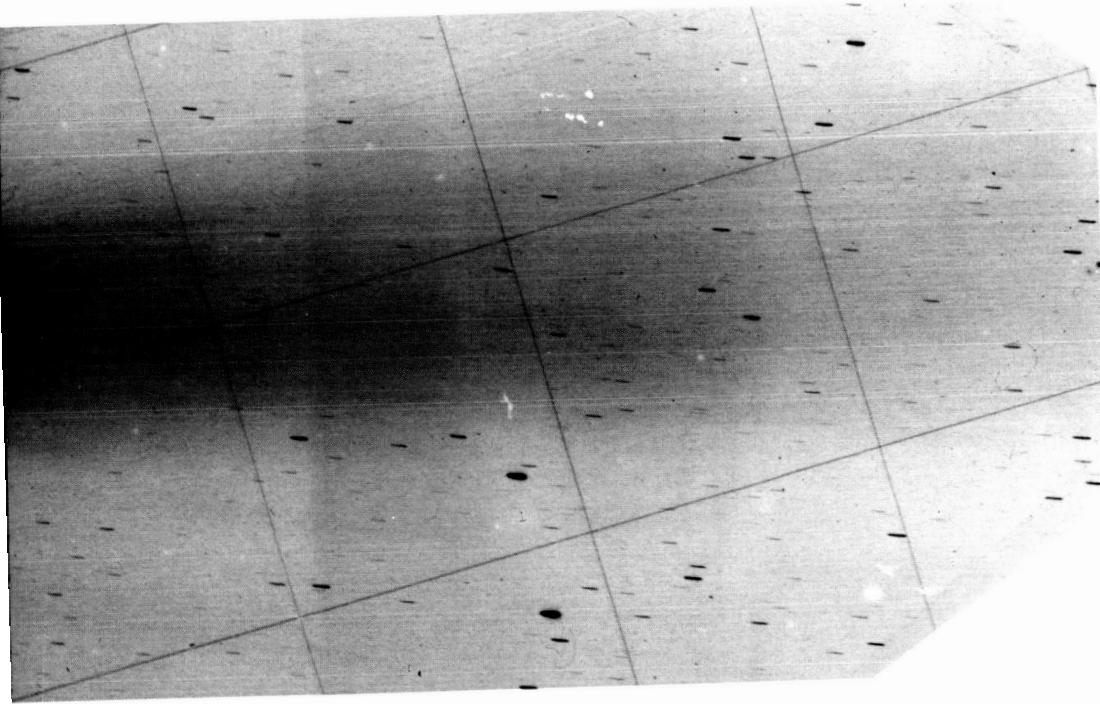


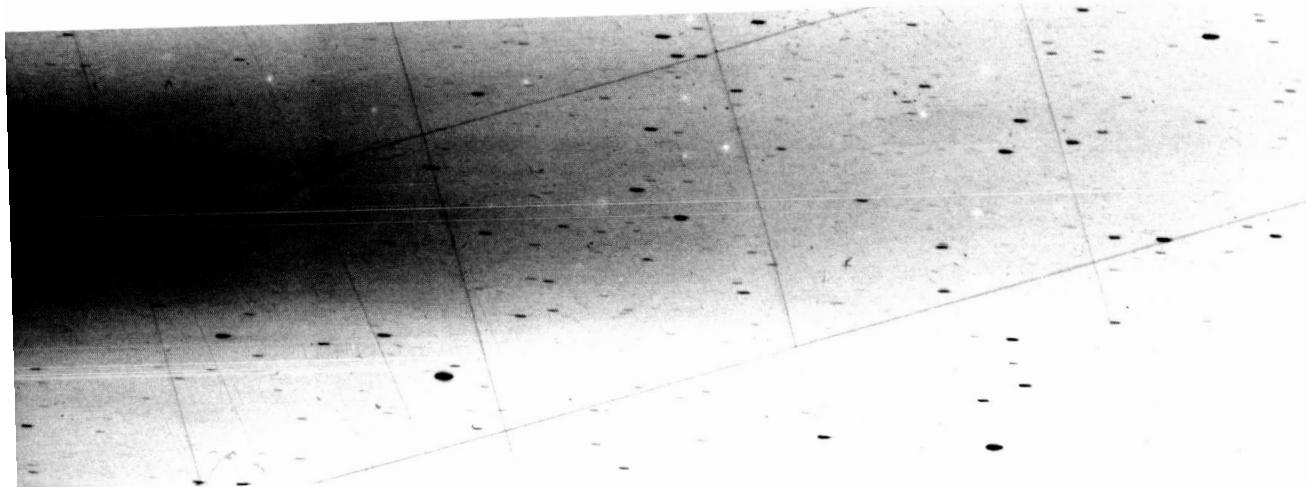
Figure 288. 1910 May 9.631; exposure 31 minutes; $r = 0.72$, $\Delta = 0.45$, $\theta = 40^\circ$, $\alpha = 115^\circ$, $S = 3.0$ E4

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S = 3.0 E4



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Figure 289-1. 1910 May 9.970; exposure 60 minutes; $r = 0.73$, $\Delta = 0.44$, $\theta = 40^\circ$,
 $\alpha = 116^\circ$, $S = 4.2$ E4

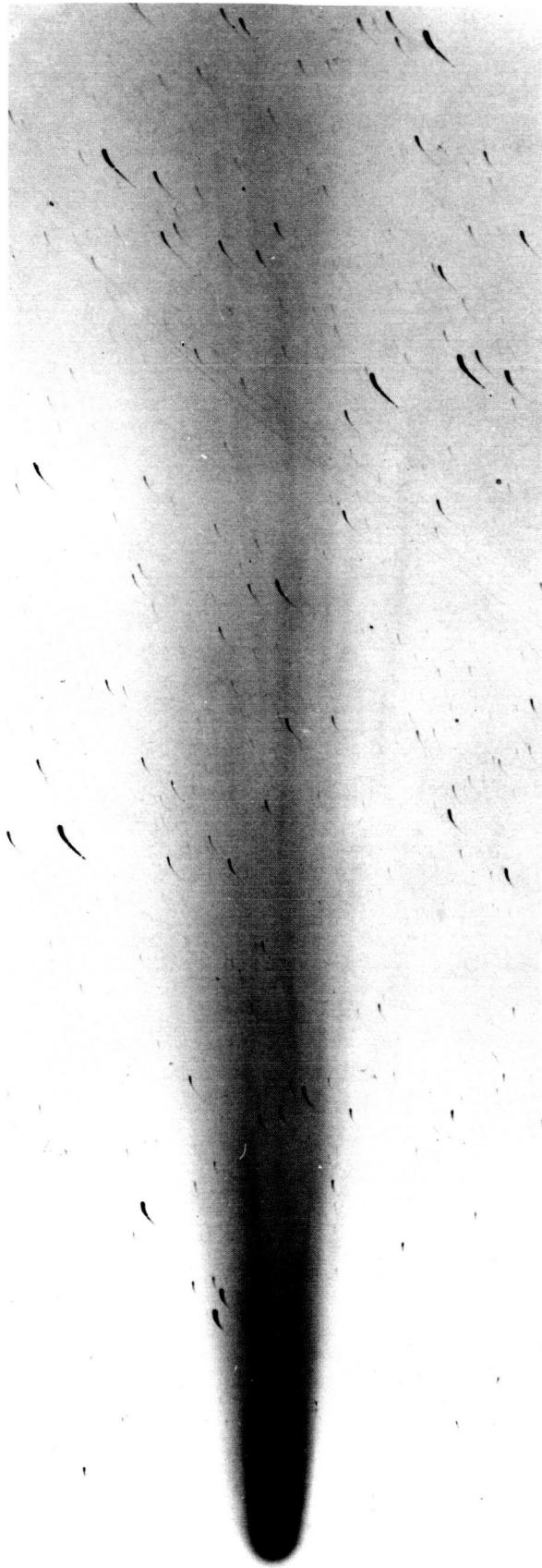


Figure 289-2. 1910 May 9.970; exposure 60 minutes; $r = 0.73$, $\Delta = 0.44$, $\theta = 40^\circ$, $\alpha = 116^\circ$, $S = 4.2$ E4

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Figure 290-1. 1910 May 9.970; exposure 60 minutes; $r = 0.73$, $\Delta = 0.44$, $\theta = 40^\circ$, $\alpha = 116^\circ$, $S = 5.0 \text{ E}4$



Figure 291. 1910 May 9.970; exposure 60 minutes; $r = 0.73$, $\Delta = 0.44$, $\theta = 40^\circ$, $\alpha = 116^\circ$, $S = 2.1 \text{ E}5$

Figure 290-2. 1910 May 9.970; exposure 60 minutes; $r = 0.73$, $\Delta = 0.44$, $\theta = 40^\circ$, $\alpha = 116^\circ$, $S = 5.0 \text{ E}4$

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Figure 292. 1910 May 9.554; exposure 1 minute;
 $r = 0.72, \Delta = 0.45, \theta = 40^\circ, \alpha = 115^\circ, S = 9.9 \text{ E}3$

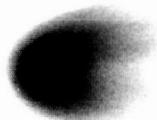


Figure 293-1. 1910 May 9.560; exposure 8 minutes;
 $r = 0.72, \Delta = 0.45, \theta = 40^\circ, \alpha = 115^\circ, S = 9.9 \text{ E}3$

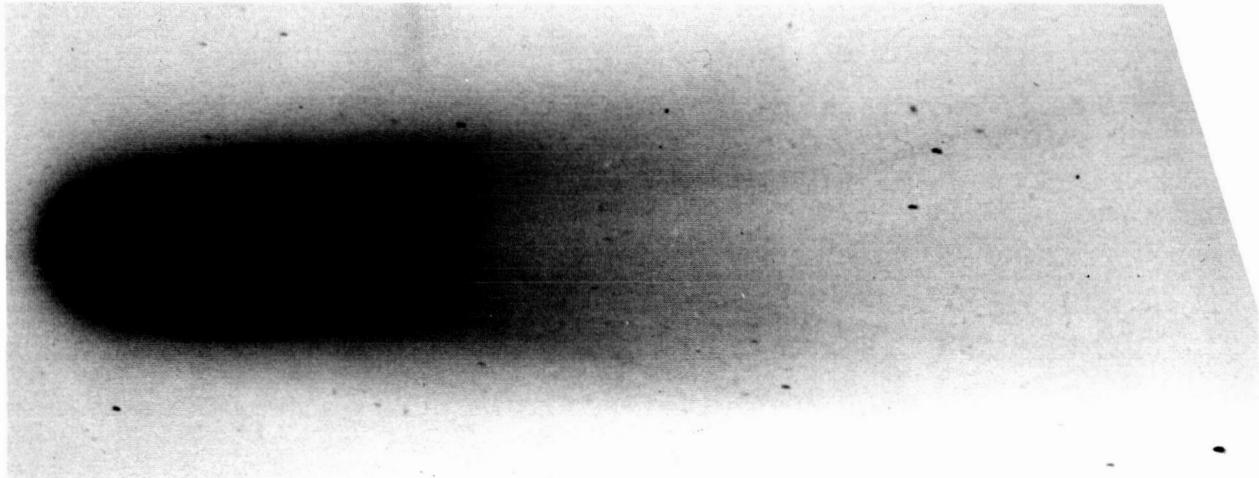


Figure 293-2. 1910 May 9.560; exposure 8 minutes; $r = 0.72, \Delta = 0.45, \theta = 40^\circ, \alpha = 115^\circ, S = 9.9 \text{ E}3$



Figure 294-1. 1910 May 9.568; exposure 0.50
minute; $r = 0.72, \Delta = 0.45, \theta = 40^\circ, \alpha = 115^\circ,$
 $S = 9.9 \text{ E}3$

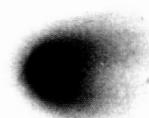


Figure 294-2. 1910 May 9.568; exposure 0.50
minute; $r = 0.72, \Delta = 0.45, \theta = 40^\circ, \alpha = 115^\circ,$
 $S = 9.9 \text{ E}3$

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Figure 295-1. 1910 May 9.576; exposure 8 minutes;
 $r = 0.72, \Delta = 0.45, \theta = 40^\circ, \alpha = 115^\circ, S = 9.9 E3$

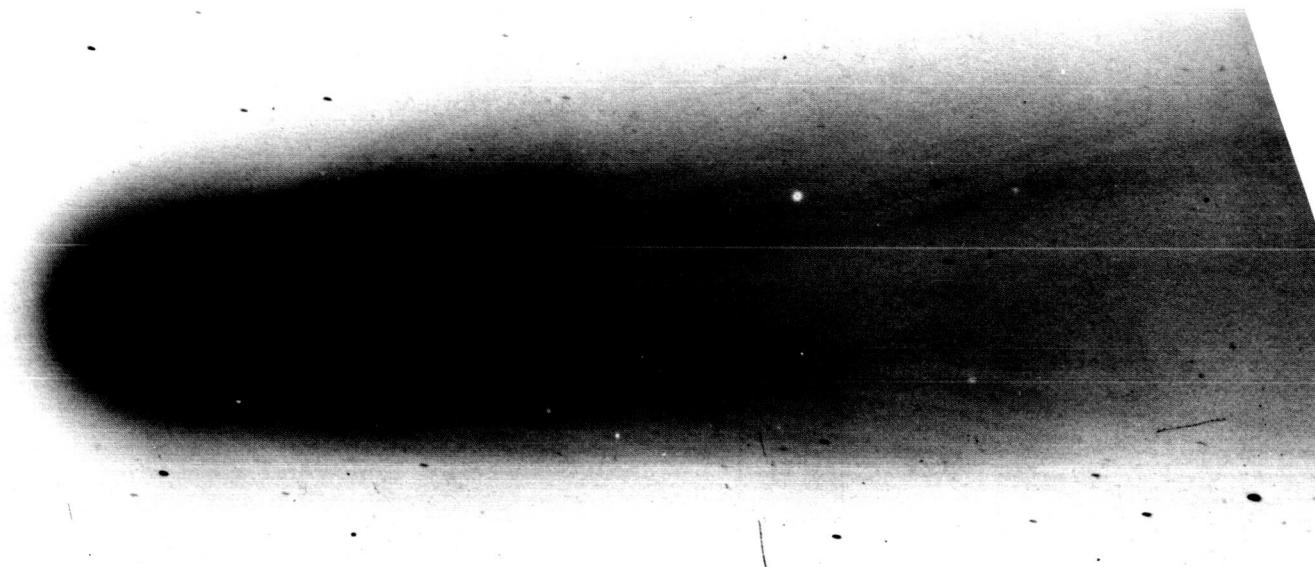


Figure 295-2. 1910 May 9.576; exposure 8 minutes; $r = 0.72, \Delta = 0.45, \theta = 40^\circ, \alpha = 115^\circ, S = 9.9 E3$

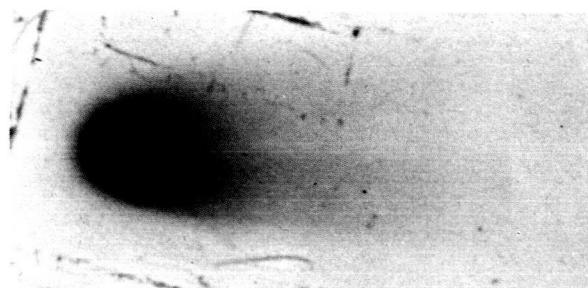


Figure 296-1. 1910 May 9.581; exposure 0.50 minute; $r = 0.72, \Delta = 0.45, \theta = 40^\circ, \alpha = 115^\circ, S = 9.9 E3$

Figure 296-2. 1910 May 9.581; exposure 0.50 minute; $r = 0.72, \Delta = 0.45, \theta = 40^\circ, \alpha = 0.45, 115^\circ, S = 9.9 E3$

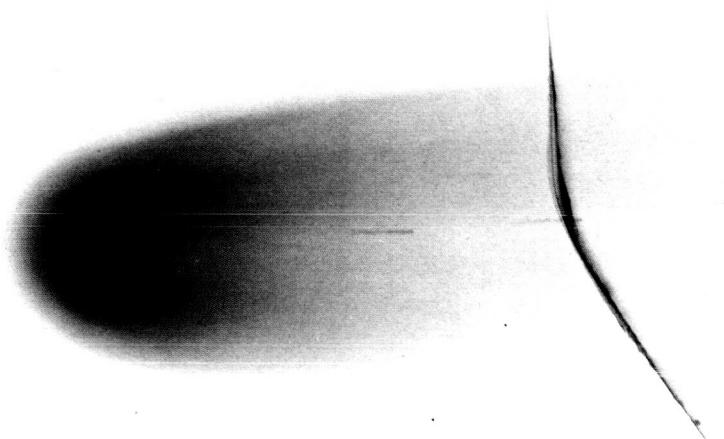


Figure 297. 1910 May 9.976; exposure 43 minutes; $r = 0.73, \Delta = 0.44, \theta = 40^\circ, \alpha = 116^\circ, S = 6.2 E3$

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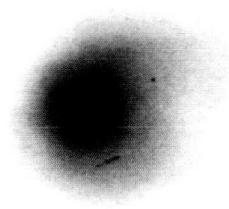


Figure 298-1. 1910 May 9.994; exposure 2 minutes; $r = 0.73$, $\Delta = 0.44$, $\theta = 40^\circ$, $\alpha = 116^\circ$, $S = 5.6$ E3

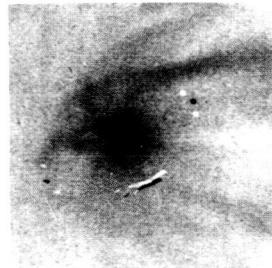


Figure 298-2. 1910 May 9.994; exposure 2 minutes; $r = 0.73$, $\Delta = 0.44$, $\theta = 40^\circ$, $\alpha = 116^\circ$, $S = 5.6$ E3

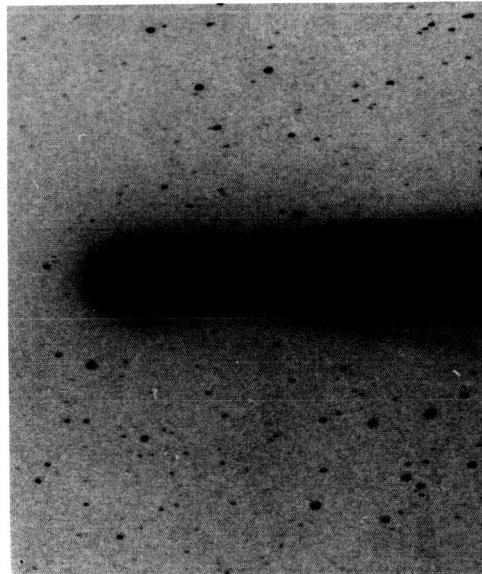


Figure 299. 1910 May 10.110; exposure

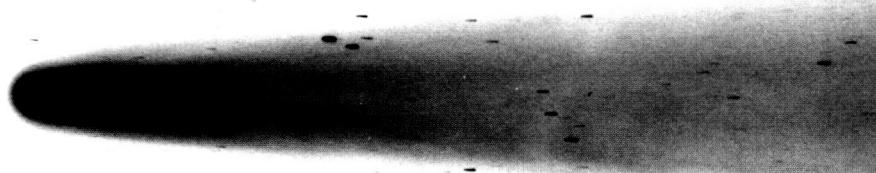


Figure 300. 1910 May 10.110; exposure 41 minutes; $r = 0.73$, $\Delta = 0.43$, $\theta = 0^\circ$, $\alpha = 0^\circ$, $S = 1.0$ E1

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41 minutes; $r = 0.73$, $\Delta = 0.43$, $\theta = 40^\circ$, $\alpha = 117^\circ$, $S = 8.9 \text{ E}4$

$\alpha = 117^\circ$, $S = 4.0 \text{ E}4$

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Figure 301. 1910 May 10.607; exposure 30 minutes; $r = 0.74$, $\Delta = 0.41$, $\theta = 3^\circ$

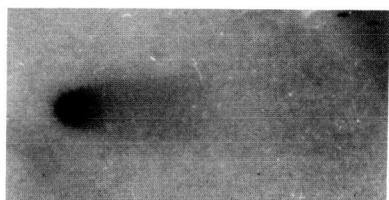
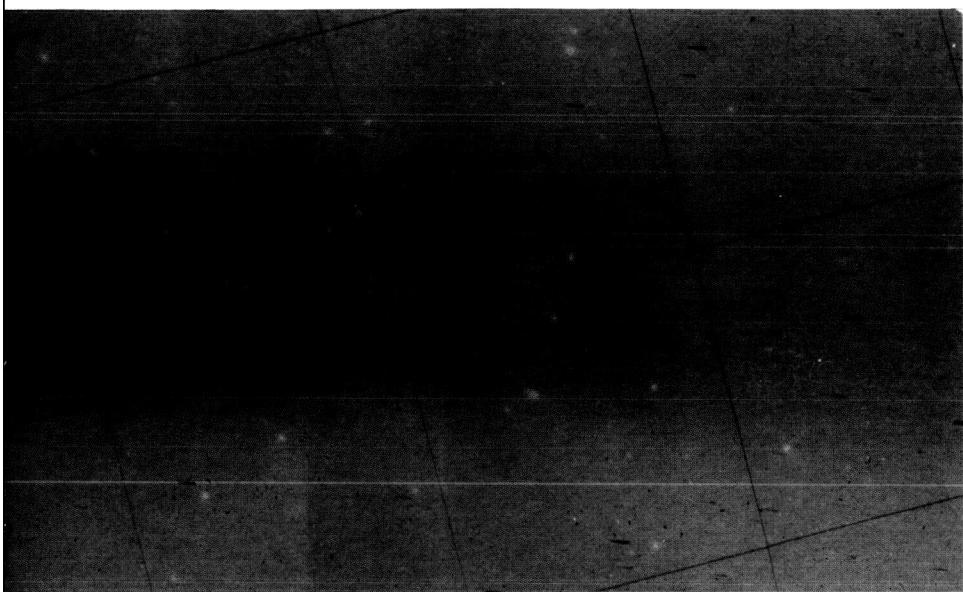


Figure 302. 1910 May 10.887; exposure 30 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 3.0$
E4



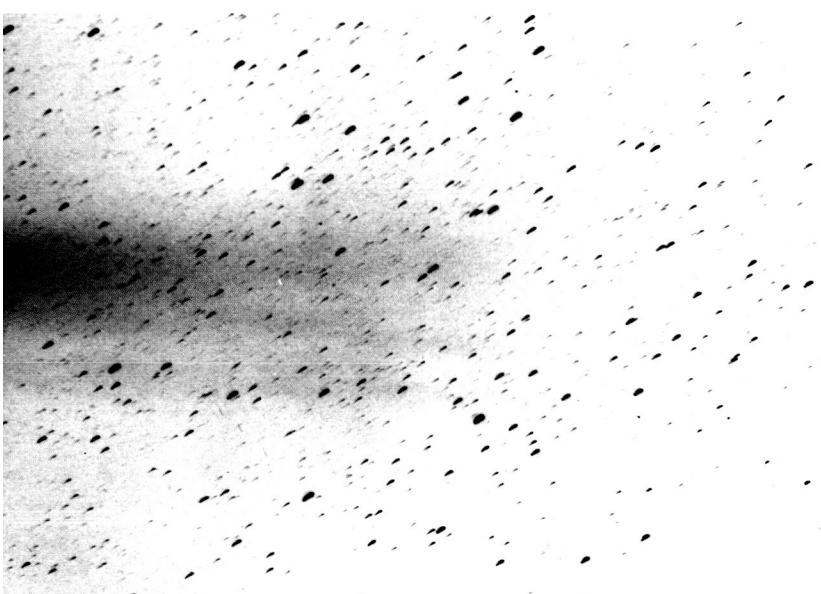
Figure 303. 1910 May 10.947; exposure 43 minutes; $r = 0.74$,

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$\alpha = 119^\circ, S = 2.7 \text{ E}4$



$\Delta = 0.40, \theta = 39^\circ, \alpha = 120^\circ, S = 1.4 \text{ E}5$

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Figure 304. 1910 May 10.948; exposure 49 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 8.5$ E4

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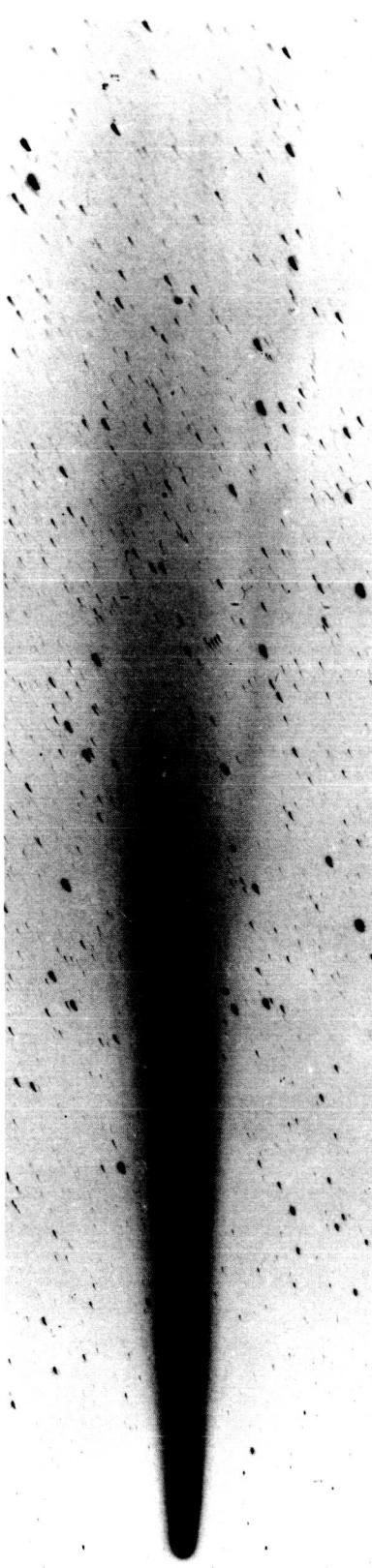


Figure 305. 1910 May 10.948; exposure 46 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 1.1 \times 10^5$

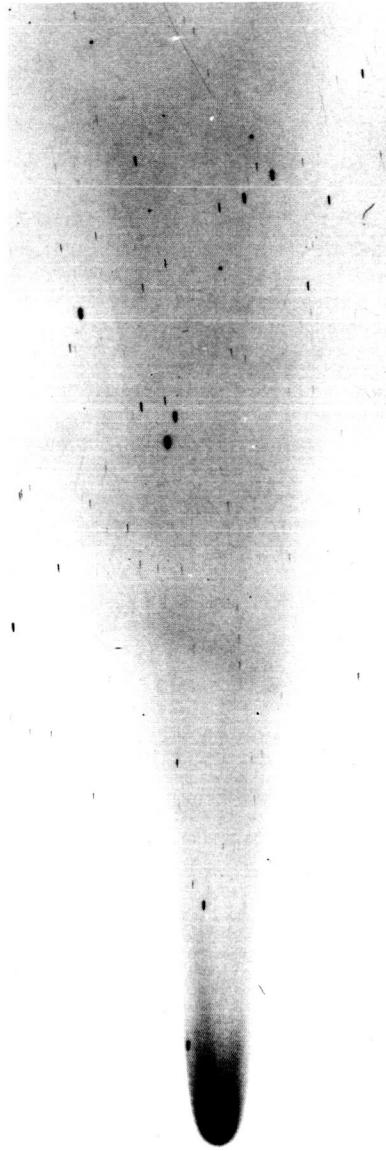


Figure 306. 1910 May 10.963; exposure 23 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 3.4 \times 10^4$

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Figure 307-1. 1910 May 10.970; exposure 60 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 3.8$ E4



Figure 308-1. 1910 May 10.970; exposure 60 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 4.6$ E4

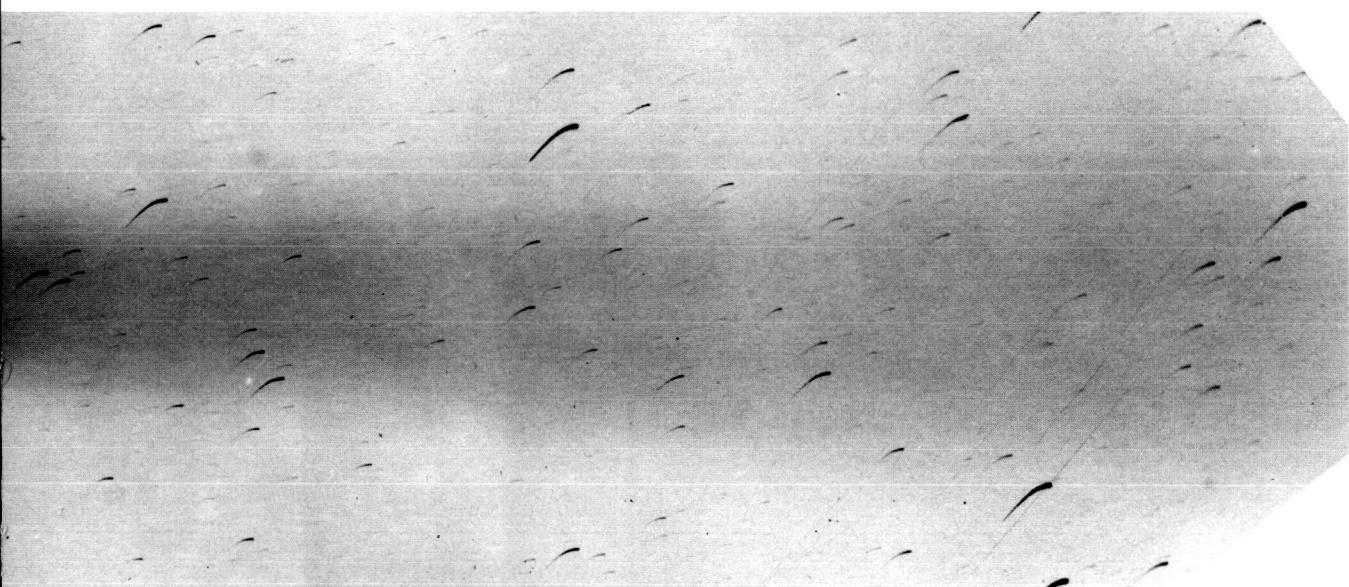


Figure 308-2. 1910 May 10.970; exposure

Figure 309. 1910 May 10.970; exposure 1 minute; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 2.4$ E5

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minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 3.8 \text{ E}4$



60 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 4.6 \text{ E}4$



Figure 310. 1910 May 10.970; exposure 60 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$,
 $\alpha = 120^\circ$, $S = 1.9 \text{ E}5$

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Figure 311. 1910 May 10.300; exposure 70 minutes; $r = 0.73$, $\Delta = 0.42$, $\theta = 40^\circ$, $\alpha = 117^\circ$, $S = 1.9 \text{ E}4$



Figure 312-1. 1910 May 10.557; exposure 2 minutes; $r = 0.74$, $\Delta = 0.41$, $\theta = 39^\circ$, $\alpha = 118^\circ$, $S = 9.1 \text{ E}3$



Figure 313-1. 1910 May 10.565; exposure 10 minutes; $r = 0.74$, $\Delta = 0.41$, $\theta = 39^\circ$, $\alpha = 118^\circ$, $S = 9.1 \text{ E}3$



Figure 312-2. 1910 May 10.557; exposure 2 minutes; $r = 0.74$, $\Delta = 0.41$, $\theta = 39^\circ$, $\alpha = 118^\circ$, $S = 9.1 \text{ E}3$

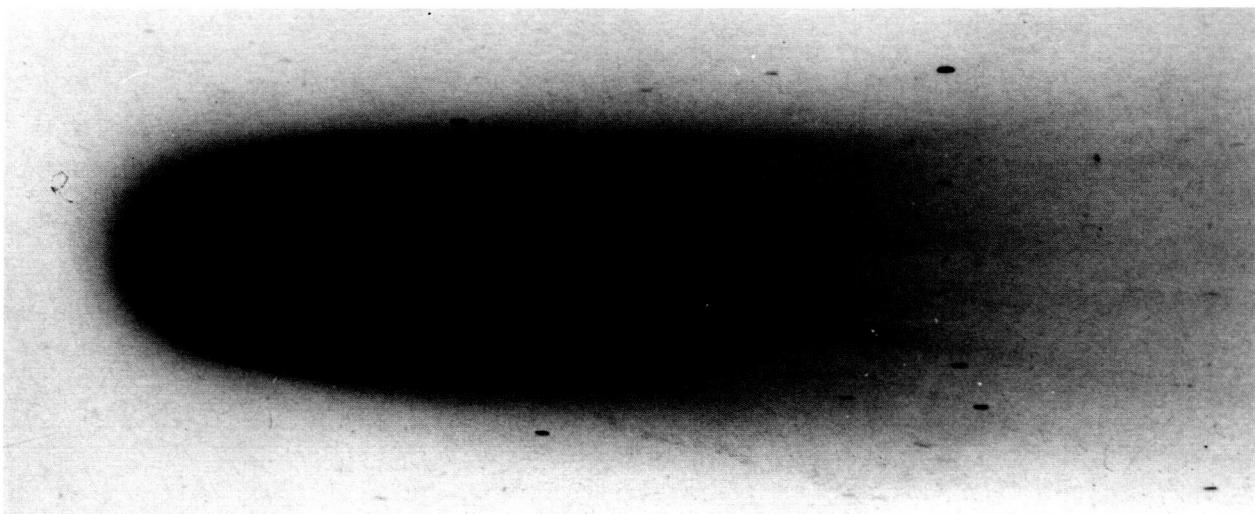


Figure 313-2. 1910 May 10.565; exposure 10 minutes; $r = 0.74$, $\Delta = 0.41$, $\theta = 39^\circ$, $\alpha = 118^\circ$, $S = 9.1 \text{ E}3$

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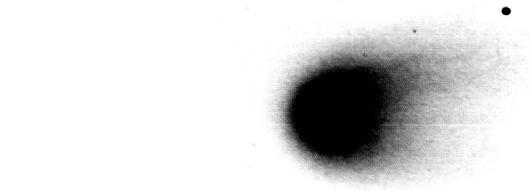


Figure 314. 1910 May 10.571; exposure 1 minute;
 $r = 0.74$, $\Delta = 0.41$, $\theta = 39^\circ$, $\alpha = 118^\circ$, $S = 9.1 \text{ E}3$

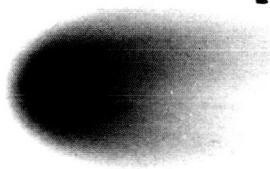


Figure 315-1. 1910 May 10.576; exposure 7 minutes; $r = 0.74$, $\Delta = 0.41$,
 $\theta = 39^\circ$, $\alpha = 118^\circ$, $S = 9.1 \text{ E}3$



Figure 315-2. 1910 May 10.576; exposure 7 minutes; $r = 0.74$, $\Delta = 0.41$, $\theta = 39^\circ$, $\alpha = 118^\circ$,
 $S = 9.1 \text{ E}3$

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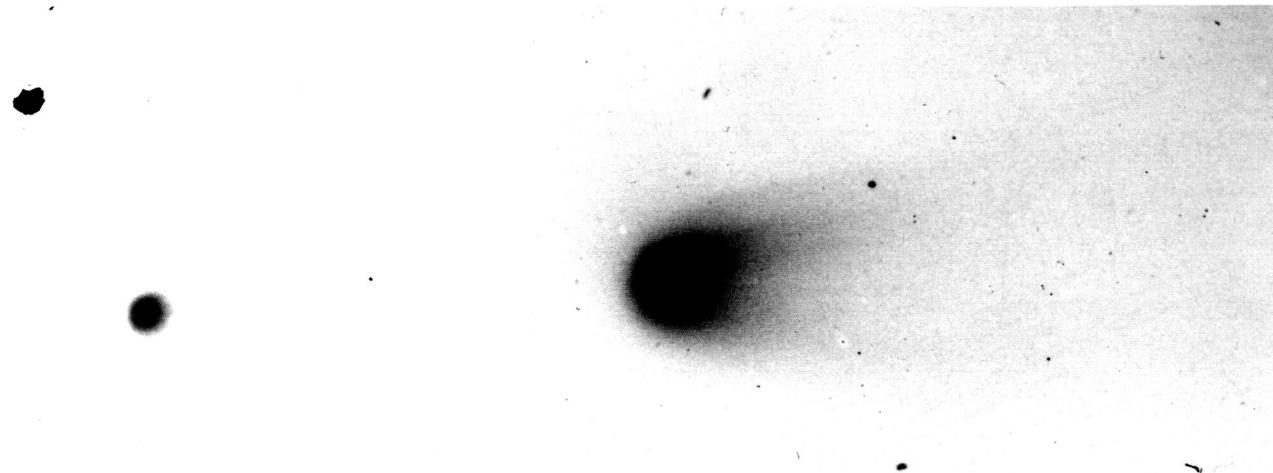


Figure 316-1. 1910 May 10.581; exposure 0.50 minute; $r = 0.74$, $\Delta = 0.41$, $\theta = 39^\circ$, $\alpha = 118^\circ$, S = 9.1 E3

Figure 316-2. 1910 May 10.581; exposure 0.50 minute; $r = 0.74$, $\Delta = 0.41$, $\theta = 39^\circ$, $\alpha = 118^\circ$, S = 9.1 E3

Figure 317a. 1910 May 10.970; exposure 0.16 minute; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, S = 5.4 E3

Figure 317b. 1910 May 10.970; exposure 0.50 minute; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, S = 5.4 E3

Figure 317c. 1910 May 10.971; exposure 1 minute; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, S = 5.4 E3



Figure 317d. 1910 May 10.972; exposure 2 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, S = 5.4 E3

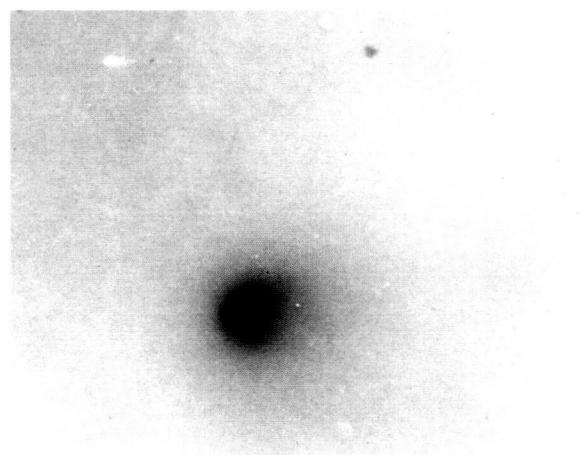


Figure 317e. 1910 May 10.974; exposure 3 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, S = 5.4 E3

C-3

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Figure 318-1. 1910 May 10.975; exposure 41 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 5.7 E3$



Figure 318-2. 1910 May 10.975; exposure 41 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 5.7 E3$

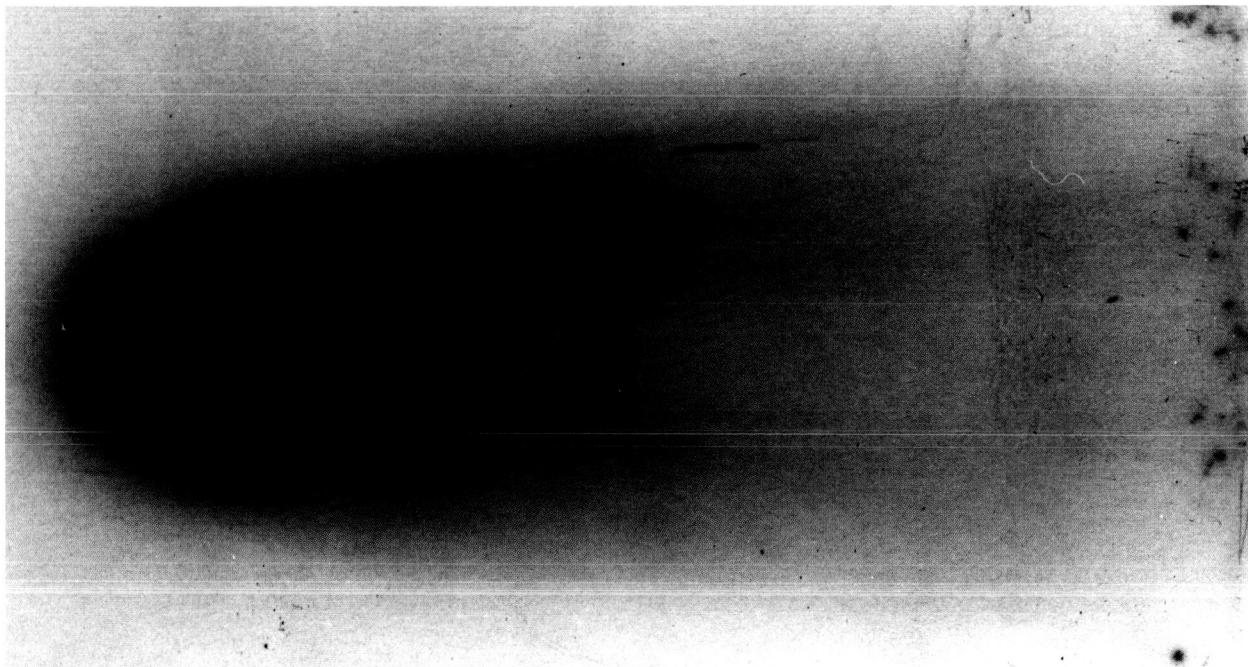


Figure 318-3. 1910 May 10.975; exposure 41 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 5.7 E3$

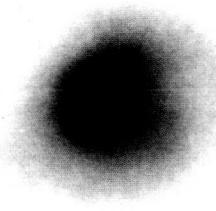


Figure 319-1. 1910
May 10.993; exposure
2 minutes; $r = 0.74$,
 $\Delta = 0.40$, $\theta = 39^\circ$,
 $\alpha = 120^\circ$, $S = 5.6$ E3



Figure 319-2. 1910
May 10.993; exposure
2 minutes; $r = 0.74$,
 $\Delta = 0.40$, $\theta = 39^\circ$,
 $\alpha = 120^\circ$, $S = 5.6$ E3

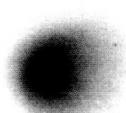


Figure 320-1. 1910 May 10.994; exposure 9
minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$,
 $S = 5.7$ E3

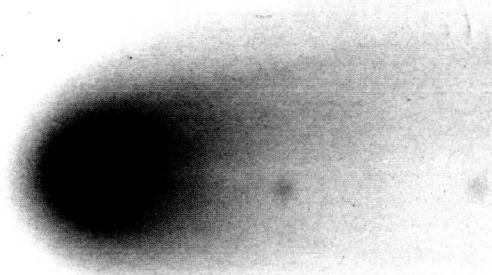


Figure 320-2. 1910 May 10.994; exposure 9 minutes; $r = 0.74$,
 $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 5.7$ E3



Figure 320-3. 1910 May 10.994; exposure 9 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$,
 $S = 5.7$ E3

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Figure 321-1. 1910 May 10.999; exposure 3 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, S = 5.7 E3

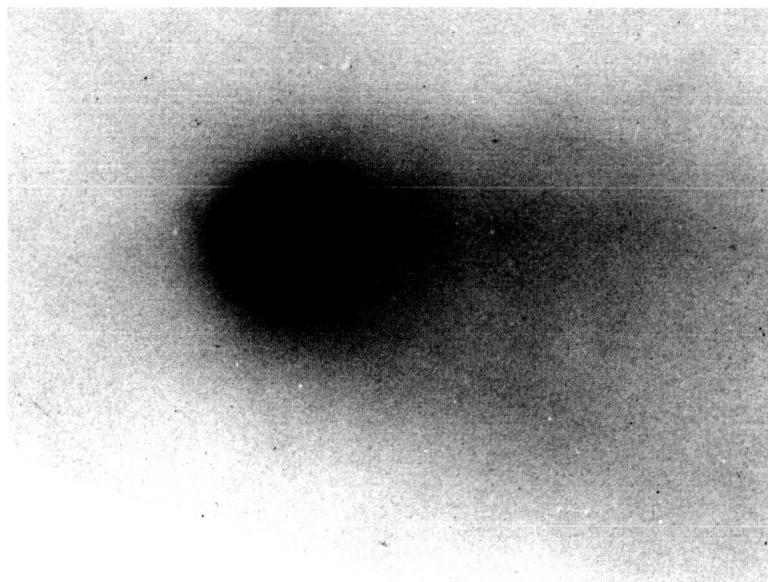


Figure 321-2. 1910 May 10.999; exposure 3 minutes; $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, S = 5.7 E3

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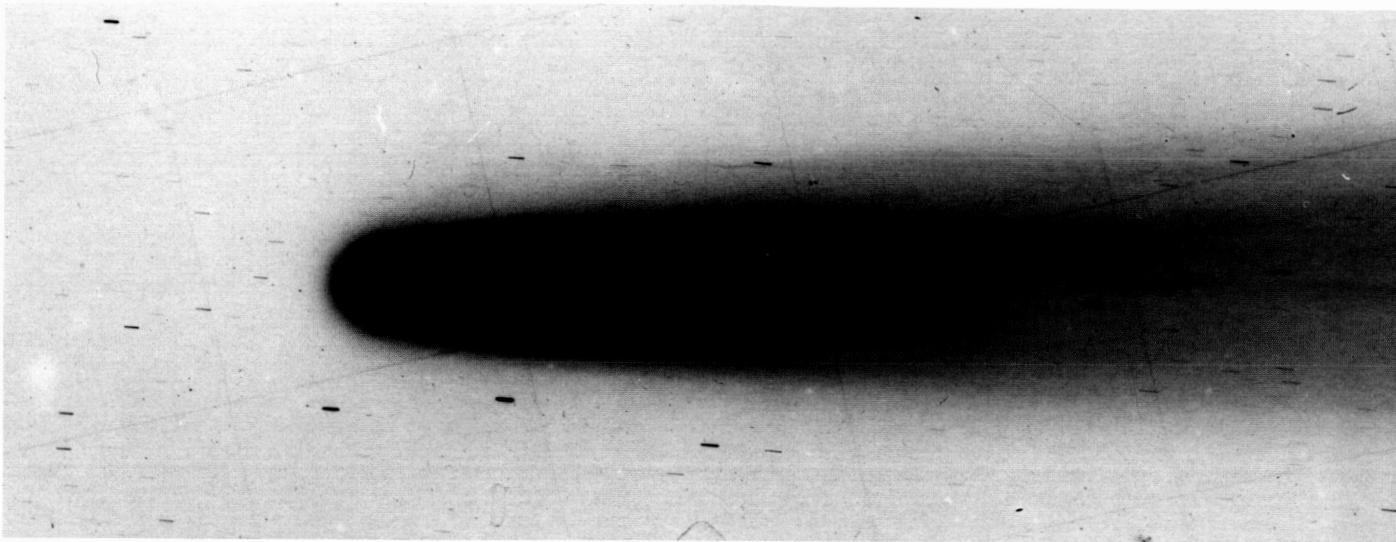


Figure 322. 1910 May 11.618; exposure 33 minutes; $r = 0.75$, $\Delta = 0.37$, $\theta = 38^\circ$, $\alpha = 123^\circ$, $S = 2.5$ E4

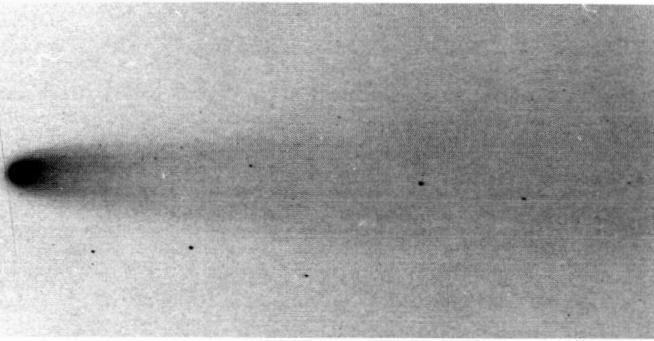


Figure 323. 1910 May 11.862; exposure 5 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.3$ E4

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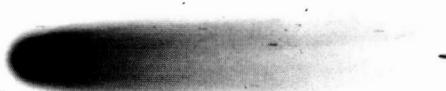


Figure 325-1. 1910 May 11.886; exposure 30 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.3$ E4



Figure 325-3. 1910 May 11.886; exposure 30 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.3$ E4

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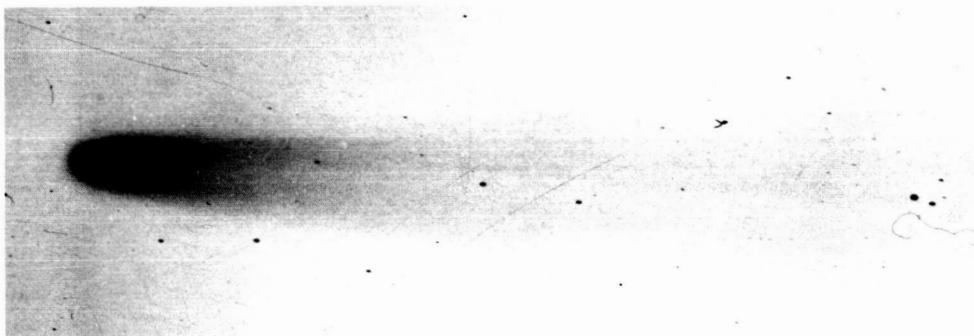


Figure 324. 1910 May 11.870; exposure 10 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.3 \text{ E}4$

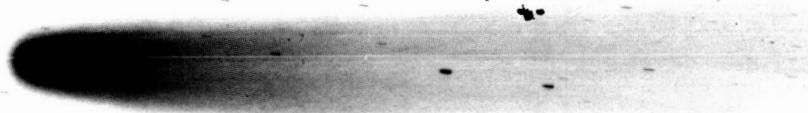
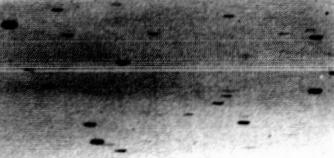


Figure 325-2. 1910 May 11.886; ex-
posure 30 minutes; $r = 0.75$, $\Delta = 0.36$,
 $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.3 \text{ E}4$



$\alpha = 124^\circ$, $S = 4.3 \text{ E}4$

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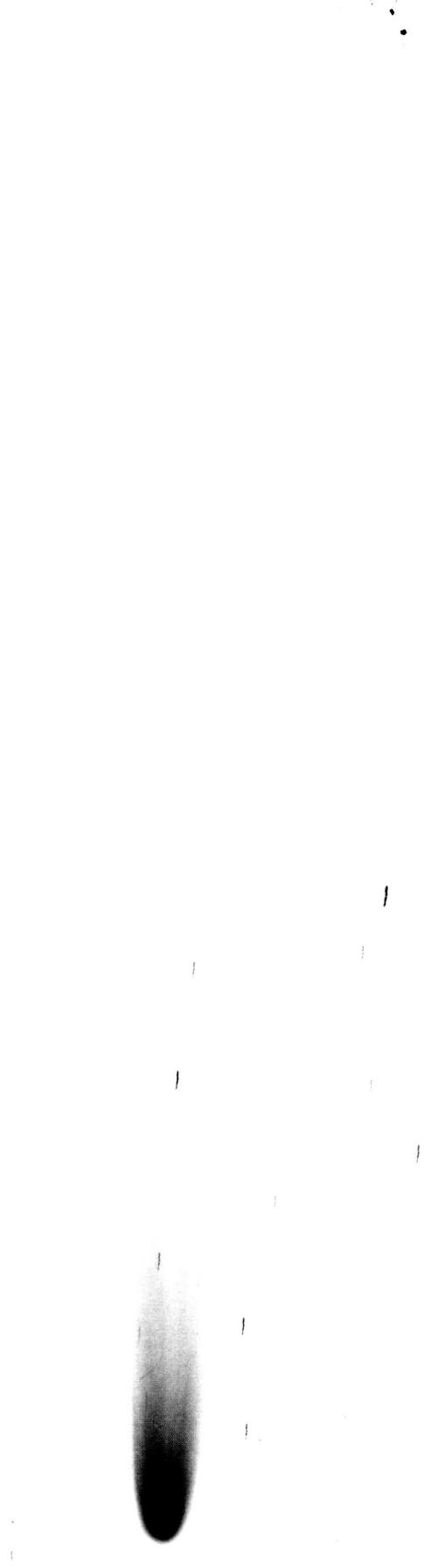


Figure 326-1. 1910 May 11.894; exposure 46 minutes; $r = 0.75$, $\Delta = 0.36$,
 $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 3.7$ E4

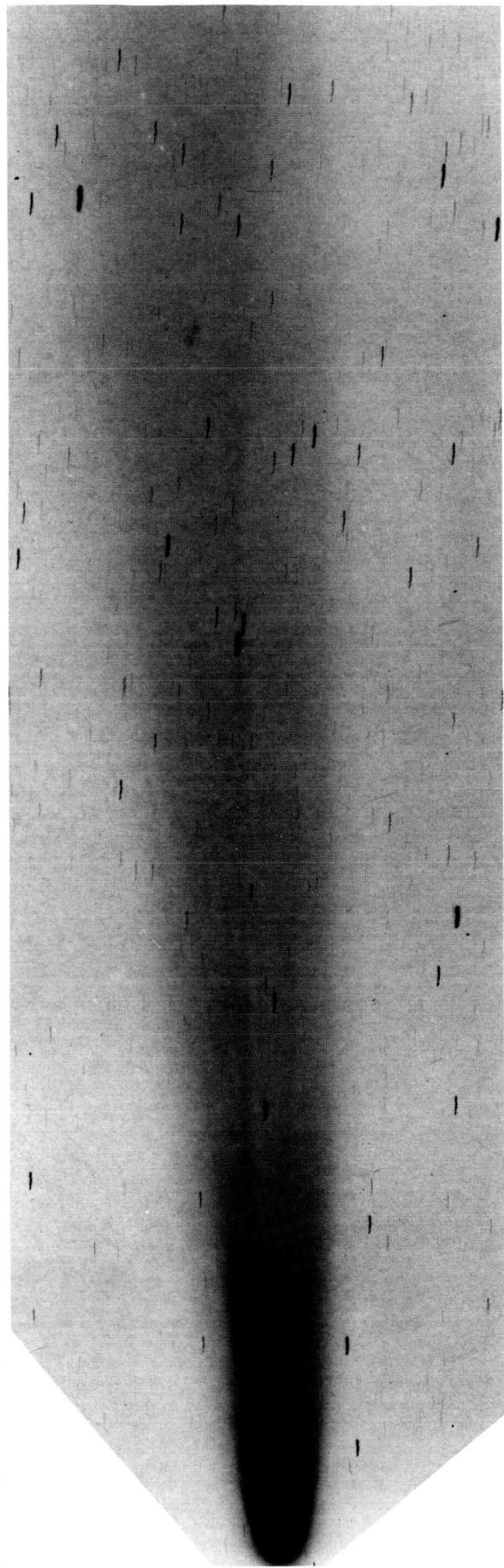


Figure 326-2. 1910 May 11.894; exposure 46 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 3.7$ E4

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Figure 327-1. 1910 May 11.903; exposure 10 minutes; $r = 0.75$,
 $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.3 E4$



Figure 327-2. 1910 may 11.903; exposure 10 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.3 E4$

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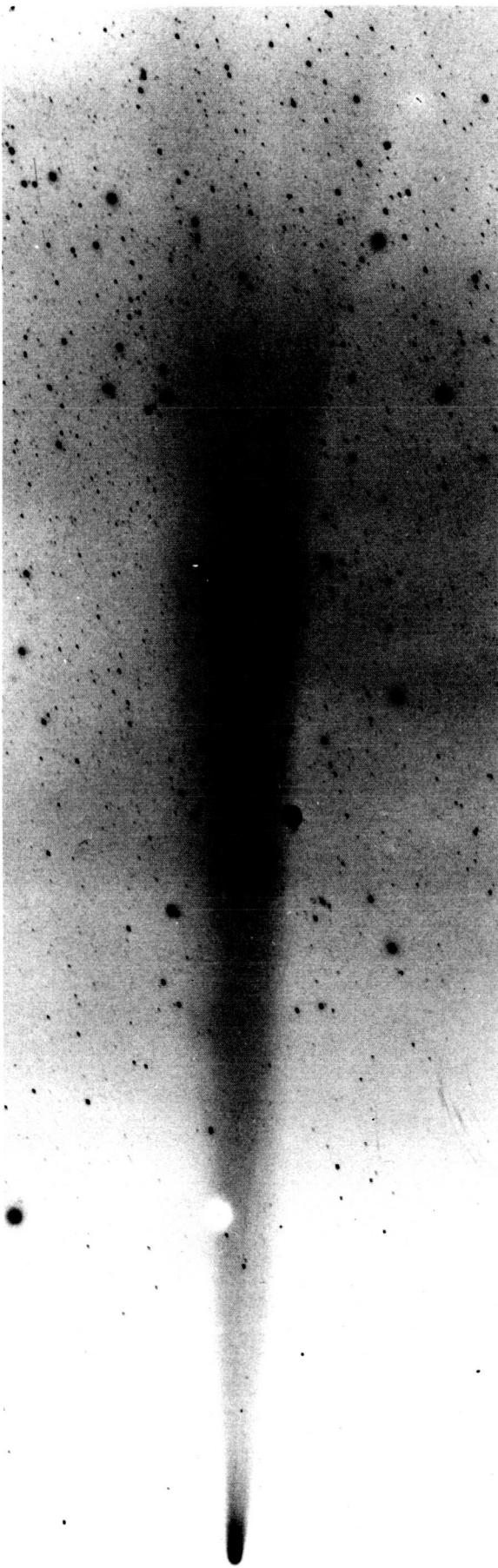


Figure 328. 1910 May 11.956; exposure 32 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 1.3 \text{ E}5$



Figure 329. 1910 May 11.957; exposure 39 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 3.1 \text{ E}4$

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Figure 330-1. 1910 May 11.976; exposure 39 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 3.5$ E4

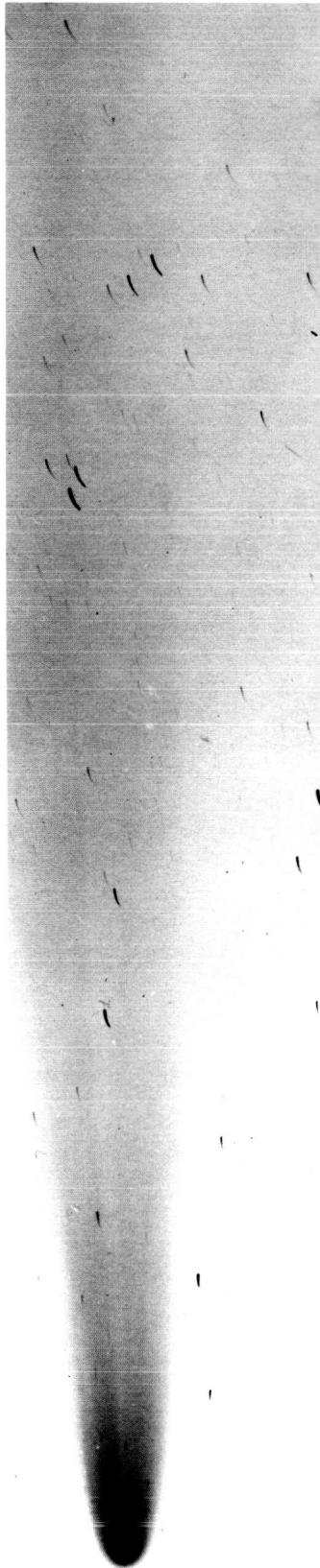


Figure 330-2. 1910 May 11.976; exposure 39 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 3.5$ E4

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Figure 331-1a. 1910 May 11.976; exposure 39 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.1 E4$

-

Figure 331-1b. 1910 May 11.976; exposure 39 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.1 E4$



Figure 331-2. 1910 May 11.976; exposure 39 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 4.1 E4$

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Figure 332-1. 1910 May 11.976;
exposure 39 minutes; $r = 0.75$,
 $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$,
 $S = 1.8 \text{ E}5$

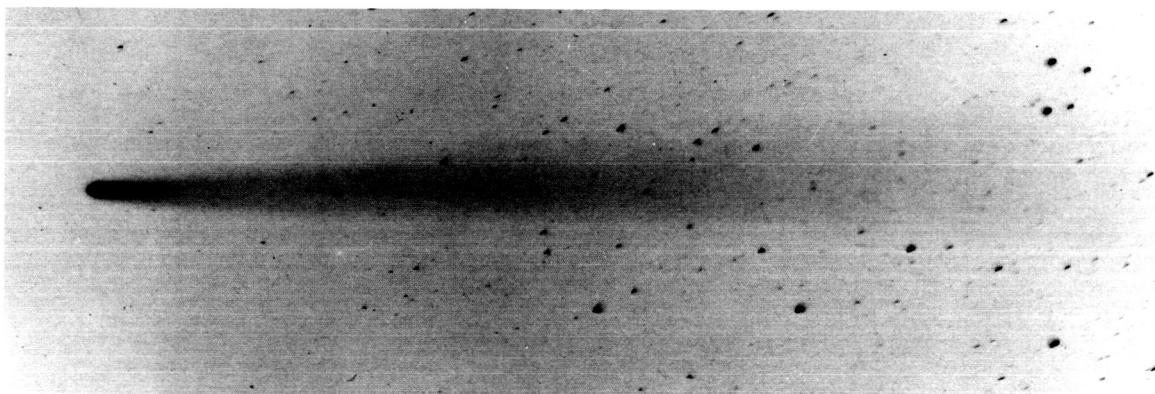


Figure 332-2. 1910 May 11.976; exposure 39 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$,
 $S = 1.8 \text{ E}5$

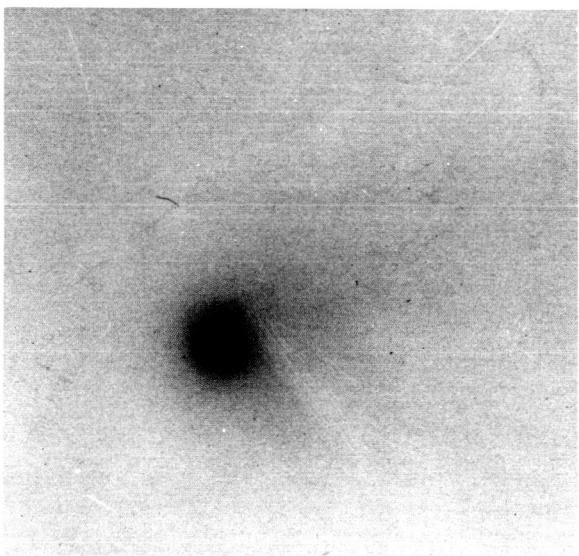


Figure 333-1. 1910 May 11.001; exposure 1 minute;
 $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 5.7 \text{ E}3$

Figure 333-2. 1910 May 11.001; exposure 1 minute;
 $r = 0.74$, $\Delta = 0.40$, $\theta = 39^\circ$, $\alpha = 120^\circ$, $S = 5.7 \text{ E}3$

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Figure 334-1. 1910 May 11.578; exposure 3 minutes; $r = 0.75$, $\Delta = 0.37$, $\theta = 38^\circ$, $\alpha = 122^\circ$, $S = 8.2$ E3

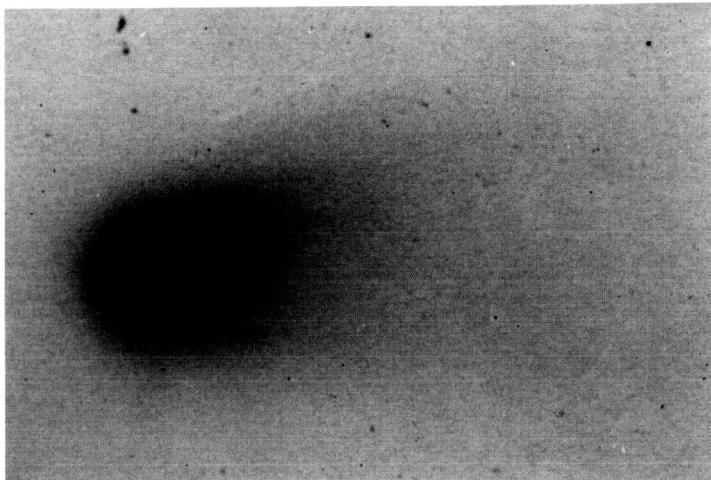


Figure 334-2. 1910 May 11.578; exposure 3 minutes; $r = 0.75$, $\Delta = 0.37$, $\theta = 38^\circ$, $\alpha = 122^\circ$, $S = 8.2$ E3



Figure 335. 1910 May 11.867; exposure 10 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 8.0$ E3



Figure 336a. 1910 May 11.890; exposure 2 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 8.0$ E3



Figure 336b. 1910 May 11.885; exposure 3 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 8.0$ E3

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Figure 337-1. 1910 May 11.903; exposure 26 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 8.0 \text{ E}3$

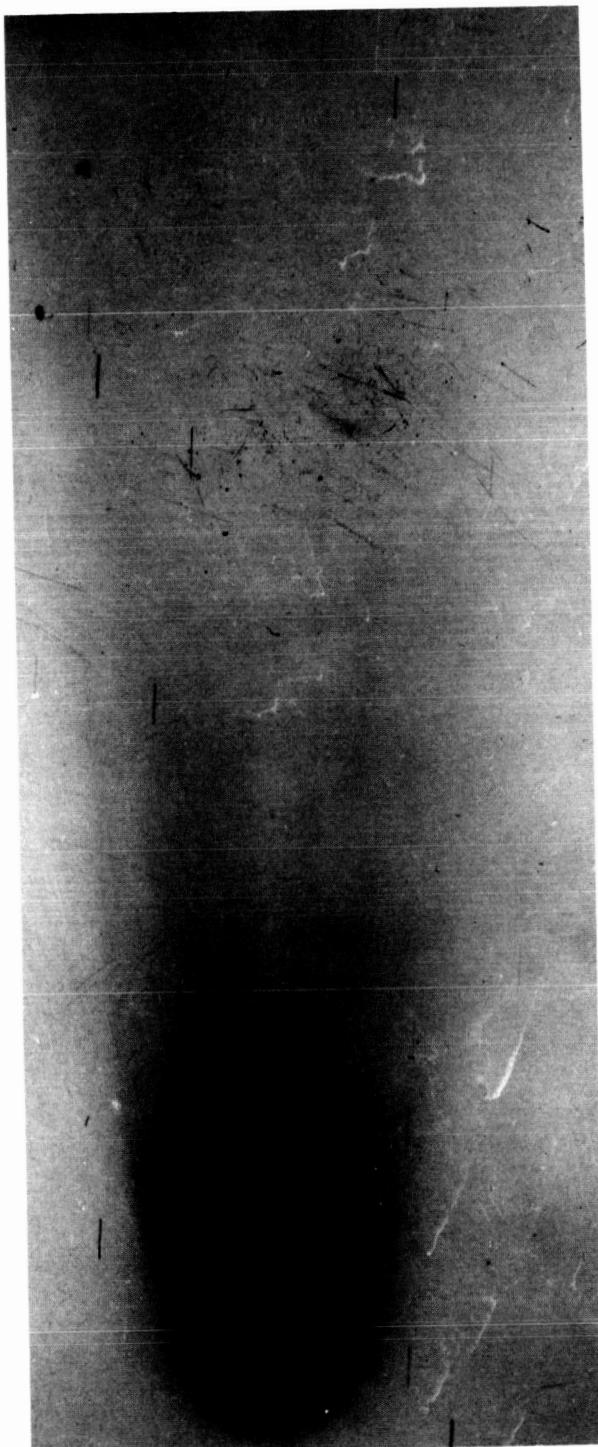


Figure 337-2. 1910 May 11.903; exposure 26 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 8.0 \text{ E}3$

ATLAS OF COMET HALLEY 1910 II

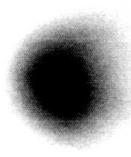


Figure 338-1. 1910 May 11.976; exposure 39 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 5.1 E3$



Figure 338-2. 1910 May 11.976; exposure 39 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 5.1 E3$

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Figure 339-1. 1910 May 11.994; exposure 7 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 5.1 \text{ E}3$

Figure 340. 1910 May 11.998; exposure 2 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 5.1 \text{ E}3$

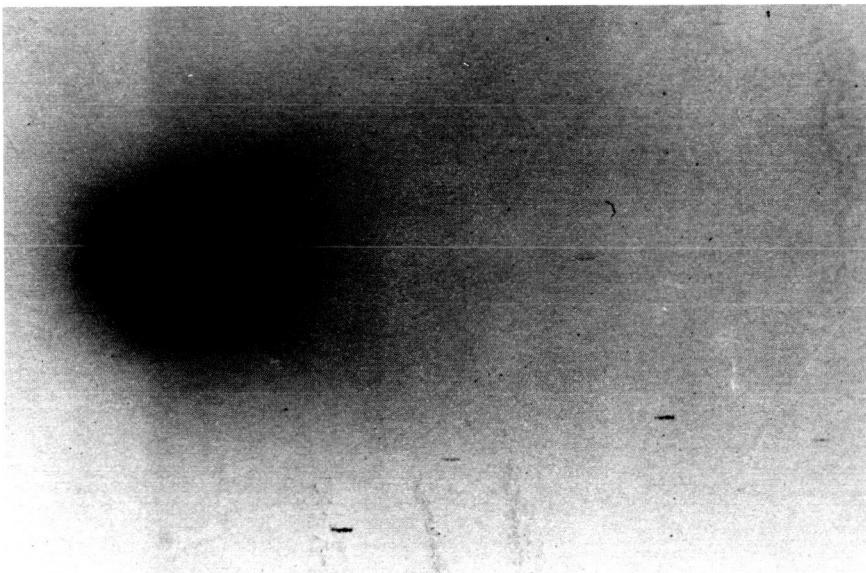


Figure 339-2. 1910 May 11.994; exposure 7 minutes; $r = 0.75$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 5.1 \text{ E}3$

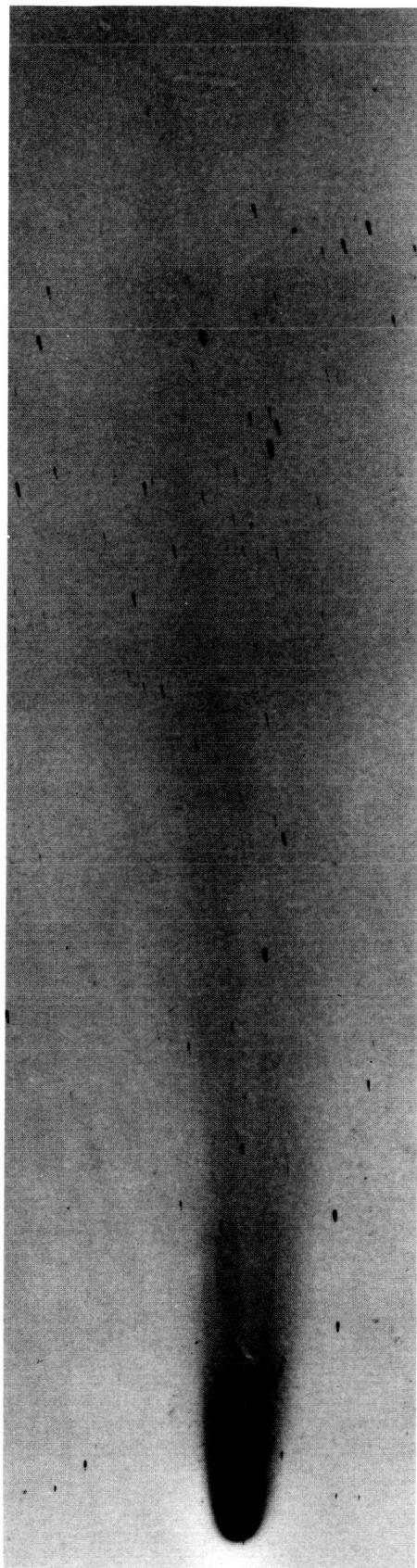


Figure 341. 1910 May 12.090; exposure 20 minutes; $r = 0.76$, $\Delta = 0.36$, $\theta = 38^\circ$, $\alpha = 125^\circ$, $S = 3.3 \text{ E}4$

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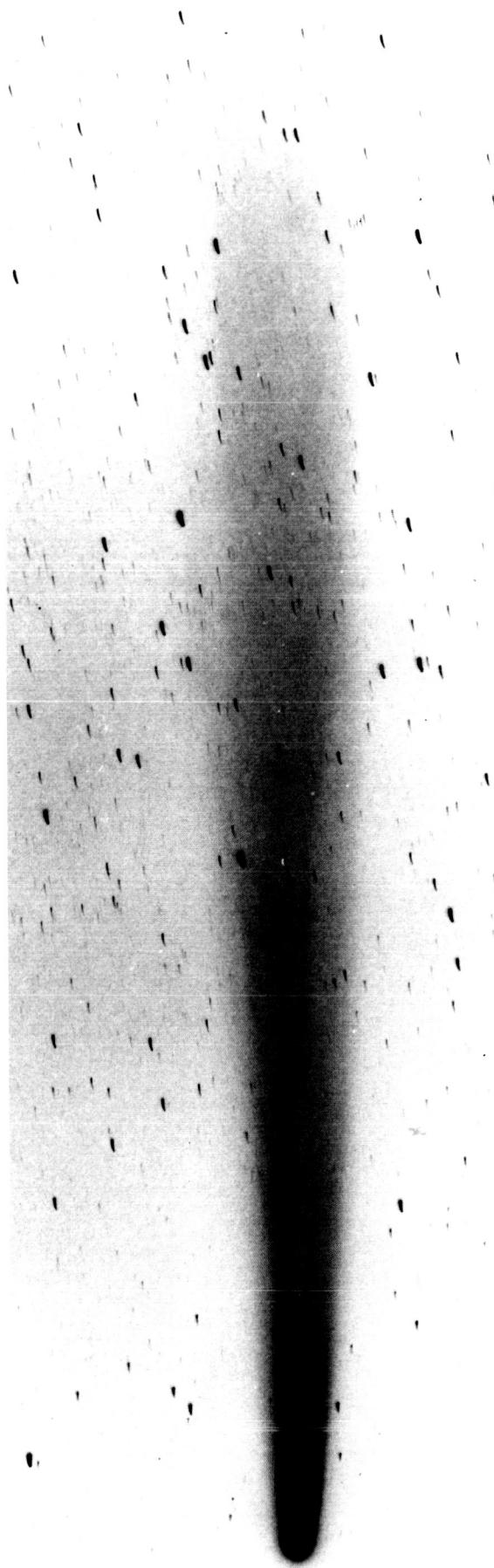


Figure 342. 1910 May 12.104; exposure 59 minutes; $r = 0.76$, $\Delta = 0.35$, $\theta = 37^\circ$, $\alpha = 125^\circ$, $S = 7.6 \text{ E}4$

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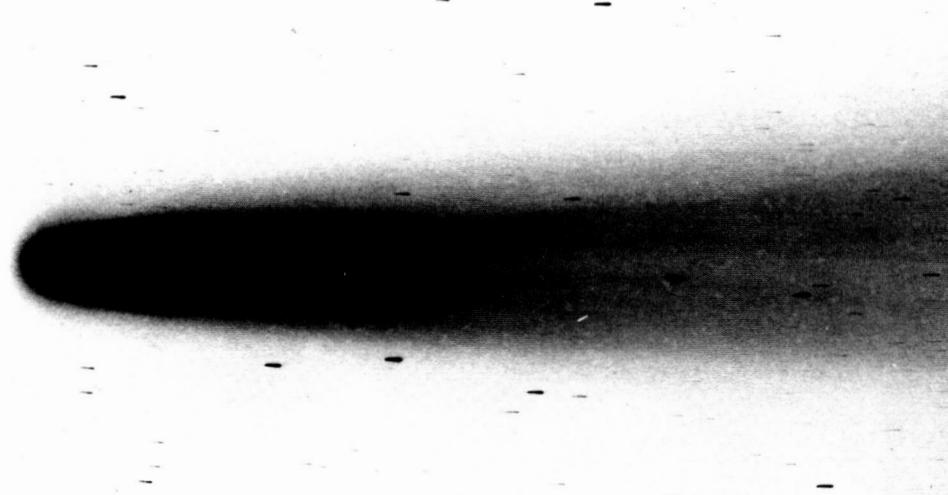


Figure 343. 1910 May 12.112; exposure 37 minutes; $r = 0.76$, $\Delta = 0.35$, $\theta =$

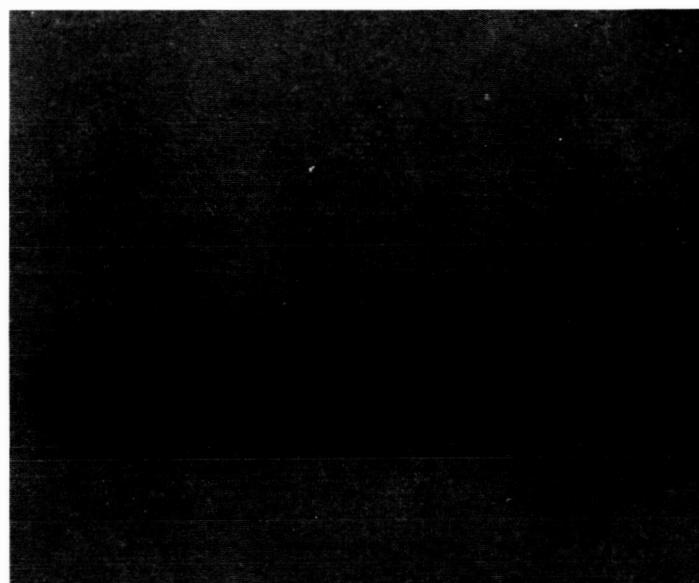


Figure 344. 1910 May 12.127; exposure 6 minutes; $r =$

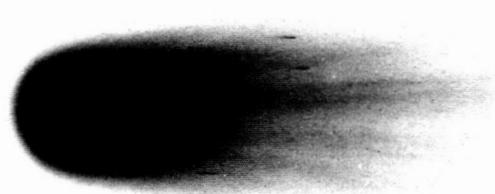
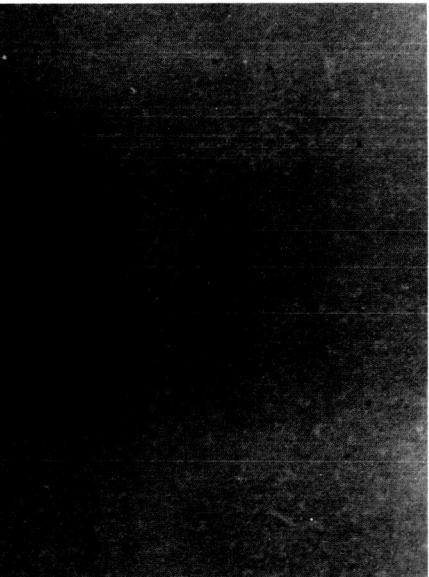


Figure 345-1. 1910 May 12.475; exposure 28 minutes; $r = 0.76$, $\Delta = 0.34$, $\theta = 37^\circ$, $\alpha = 126^\circ$, $S = 1.4$ E4

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$37^\circ, \alpha = 125^\circ, S = 3.3 E4$



$0.76, \Delta = 0.35, \theta = 37^\circ, \alpha = 125^\circ, S = 3.3 E4$

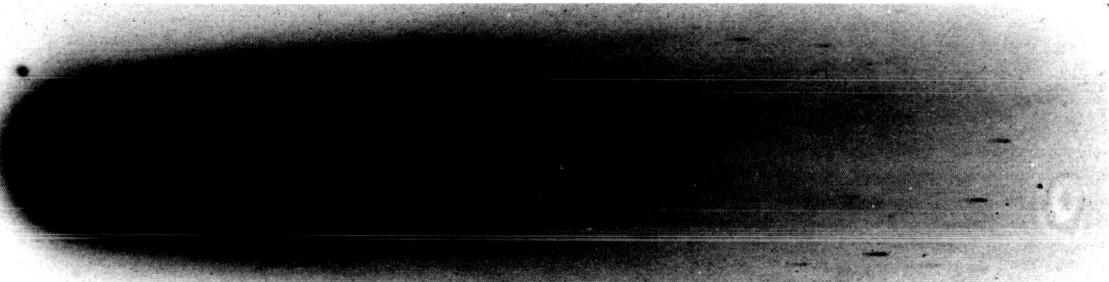


Figure 345-2. 1910 May 12.475; exposure 38 minutes; $r = 0.76, \Delta = 0.34, \theta = 37^\circ, \alpha = 126^\circ, S = 1.4 E4$

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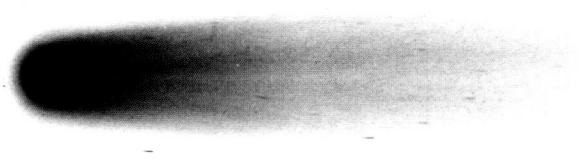


Figure 346-1. 1910 May 12.475; exposure 27 minutes; $r = 0.76$, $\Delta = 0.34$,
 $\theta = 37^\circ$, $\alpha = 126^\circ$, S = 3.0 E4

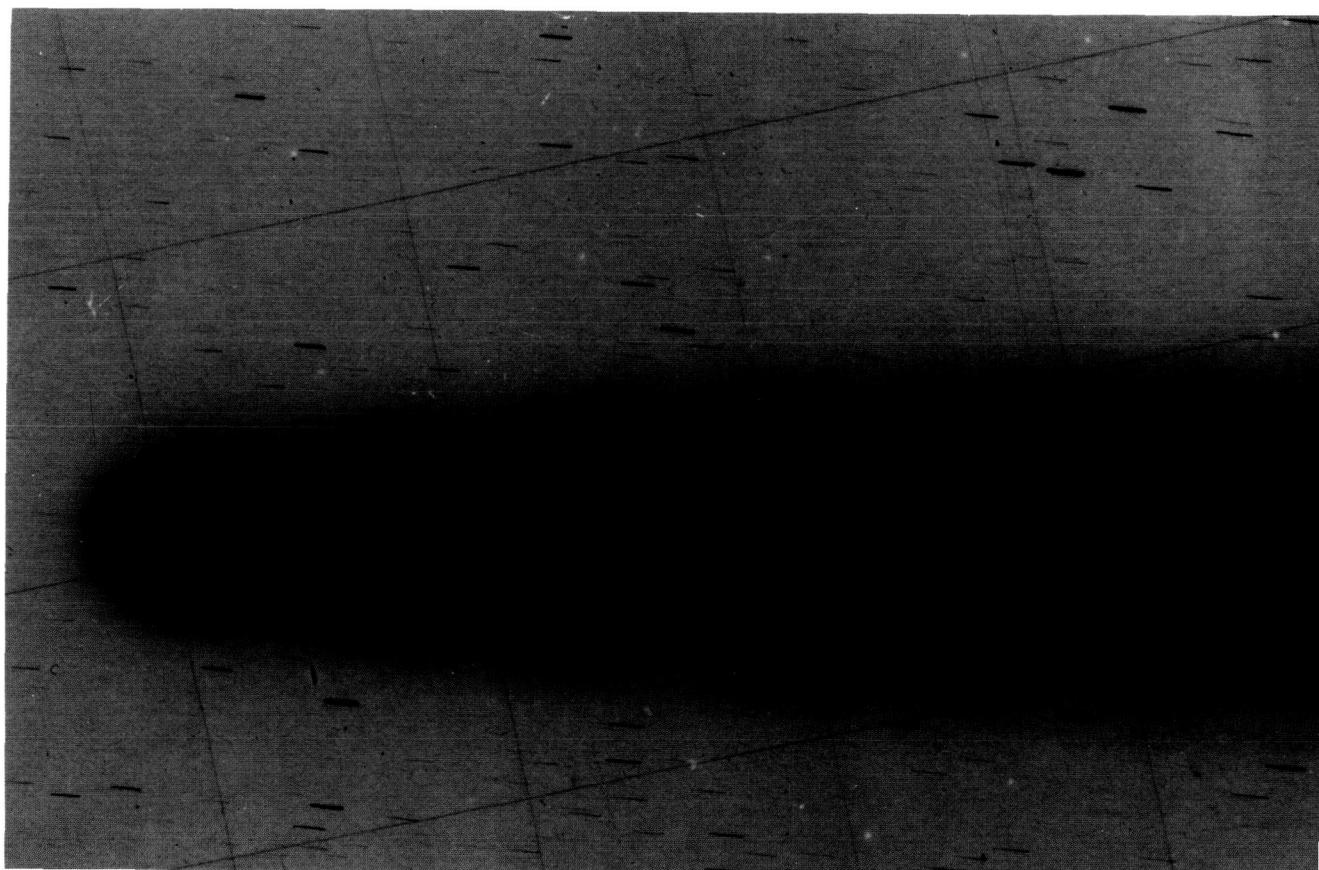


Figure 347. 1910 May 12.619; exposure 49 minutes; $r = 0.76$, $\Delta = 0.34$, $\theta = 37^\circ$, $\alpha = 127^\circ$, S = 2.2 E4

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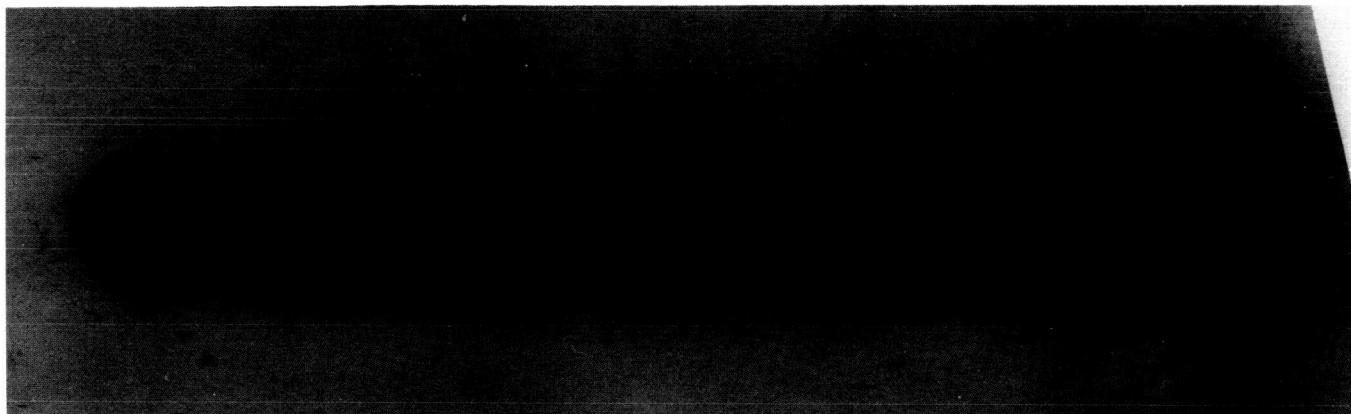
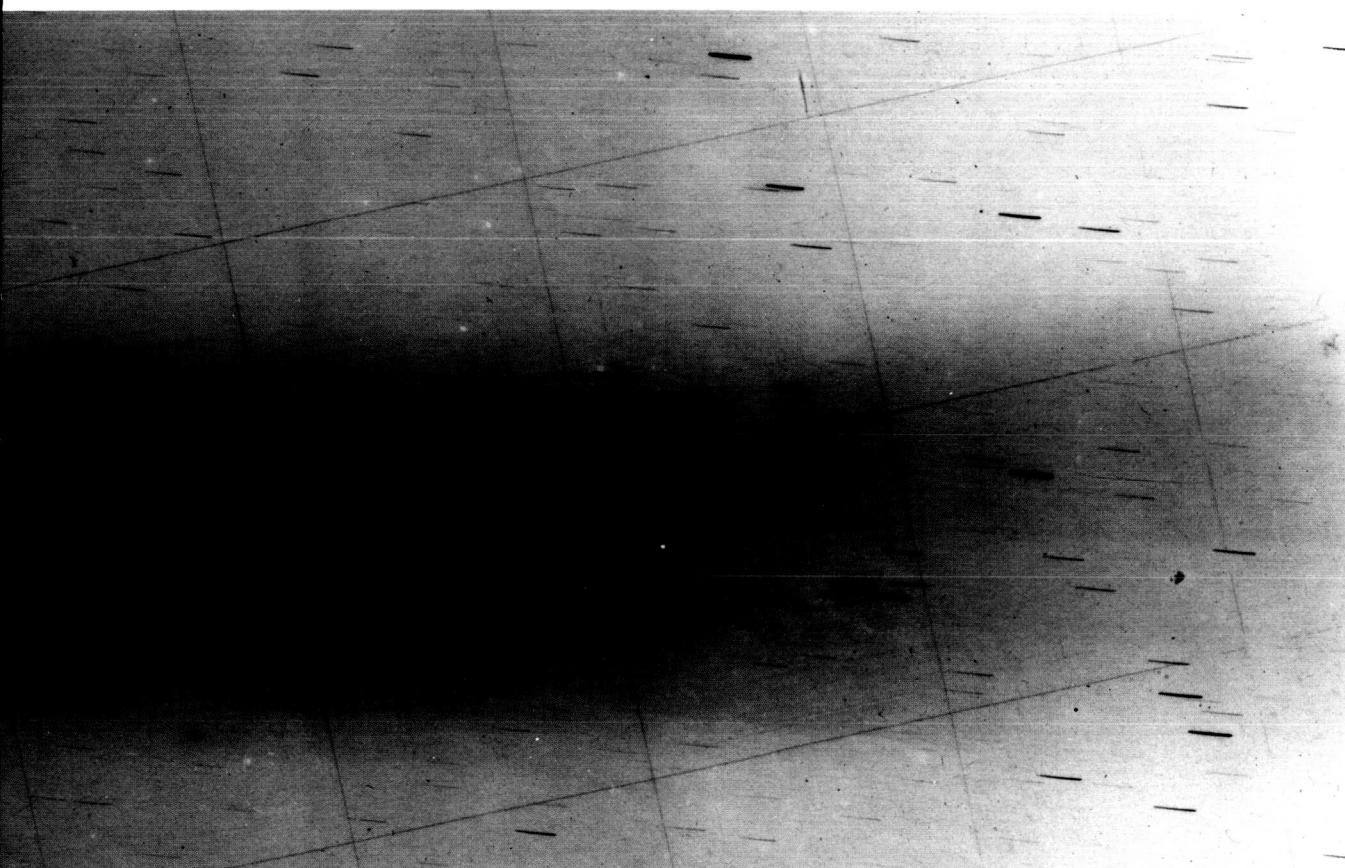


Figure 346-2. 1910 May 12.475; exposure 27 minutes; $r = 0.76$, $\Delta = 0.34$, $\theta = 37^\circ$, $\alpha = 126^\circ$, S = 3.0 E4



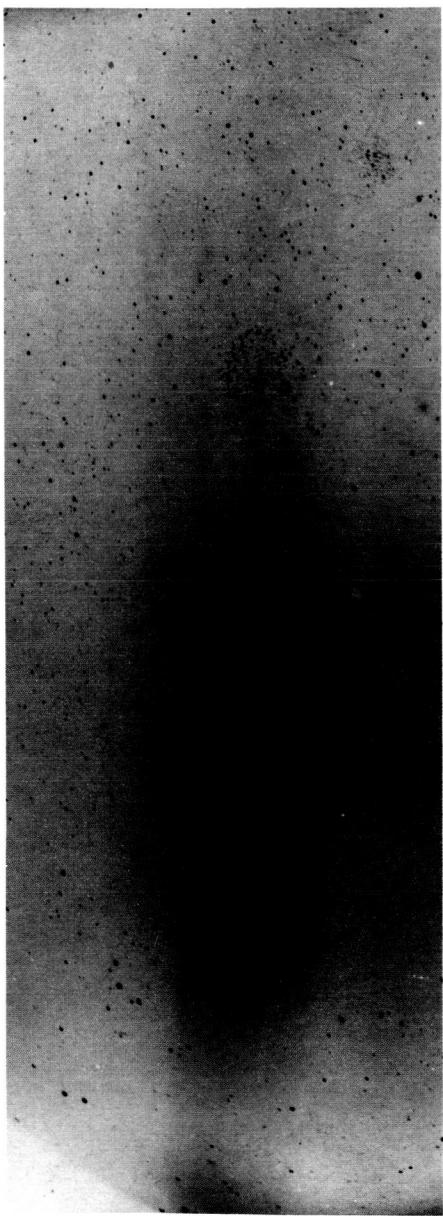


Figure 348. 1910 May 12.863; exposure 30 minutes; $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$, $\alpha = 128^\circ$, $S = 7.7$ E4



Figure 349-1. 1910 May 12.888; exposure 30 minutes; $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$, $\alpha = 128^\circ$, $S = 3.9$ E4

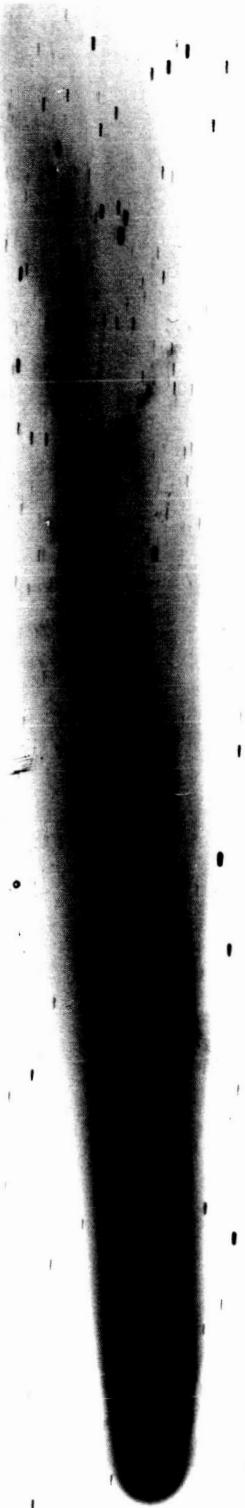
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Figure 349-2. 1910 May 12.888; exposure 30 minutes; $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$,
 $\alpha = 128^\circ$, $S = 3.9$ E4



Figure 349-3. 1910 May 12.888; exposure 30 minutes; $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$, $\alpha = 128^\circ$, $S = 3.9$ E4



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Figure 350-1. 1910 May 12.905; exposure 10 minutes; $r = 0.77$,
 $\Delta = 0.33$, $\theta = 36^\circ$, $\alpha = 128^\circ$, $S = 3.8 \text{ E}4$

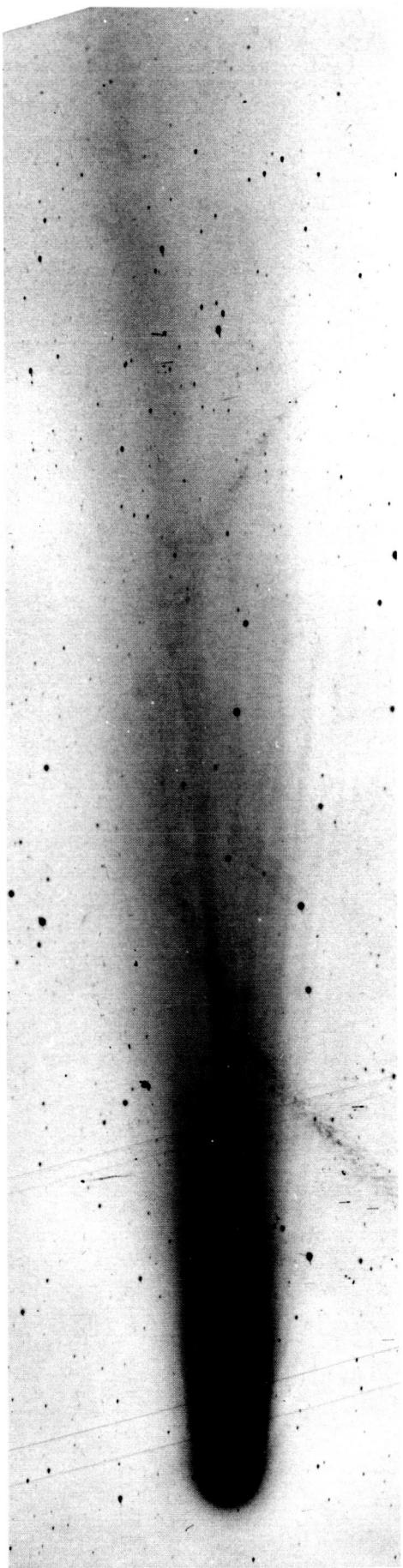


Figure 350-2. 1910 May 12.905; exposure 10 minutes; $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$, $\alpha = 128^\circ$, $S = 3.8 \text{ E}4$

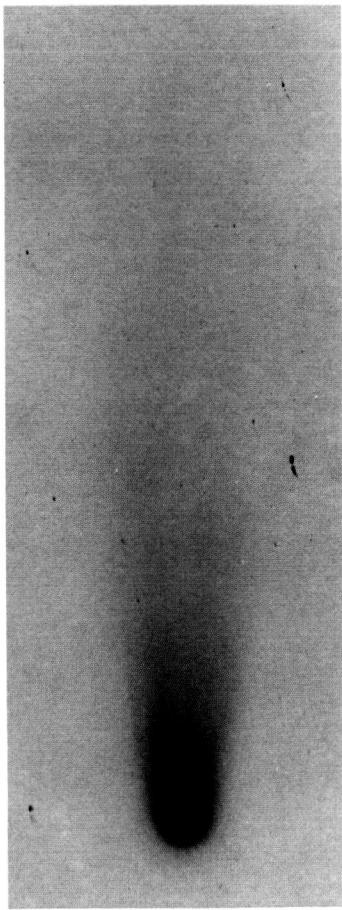


Figure 351. 1910 May 12.970; exposure 45 minutes; $r = 0.77$, $\Delta = 0.32$, $\theta = 36^\circ$, $\alpha = 129^\circ$, $S = 3.1 \text{ E}4$

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Figure 352-1. 1910 May 12.970; exposure
45 minutes; $r = 0.77$, $\Delta = 0.32$, $\theta = 36^\circ$,
 $\alpha = 129^\circ$, $S = 3.7$ E4

Figure 352-2. 1910 May 12.970; exposure 45 minutes; $r = 0.77$, $\Delta = 0.32$, $\theta = 36^\circ$, $\alpha = 129^\circ$, $S = 3.7$ E4



Figure 353. 1910 May 12.000; ex-
posure 0.50 minute; $r = 0.75$, $\Delta =$
 0.36 , $\theta = 38^\circ$, $\alpha = 124^\circ$, $S = 5.1$
E3

Figure 354. 1910 May 12.868; exposure 10
minutes; $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$, $\alpha =$
 128° , $S = 7.2$ E3

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Figure 356-1. 1910 May 12.902; exposure 25 minutes;
 $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$, $\alpha = 128^\circ$, $S = 7.2$ E3



Figure 355a. 1910 May 12.890; exposure
2 minutes; $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$,
 $\alpha = 128^\circ$, $S = 7.2$ E3

Figure 355b. 1910 May 12.887; exposure
3 minutes; $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$,
 $\alpha = 128^\circ$, $S = 7.2$ E3



Figure 356-2. 1910 May 12.902; exposure 25 minutes; $r = 0.77$, $\Delta = 0.33$, $\theta = 36^\circ$, $\alpha = 128^\circ$, $S = 7.2$ E3

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Figure 357. 1910 May 12.967; exposure 16 minutes; $r = 0.77$, $\Delta = 0.32$, $\theta = 36^\circ$, $\alpha = 129^\circ$, $S = 9.3$ E3

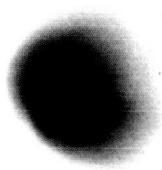


Figure 358-1. 1910 May 12.982; exposure 13 minutes; $r = 0.77$, $\Delta = 0.32$, $\theta = 36^\circ$, $\alpha = 129^\circ$, $S = 4.6$ E3

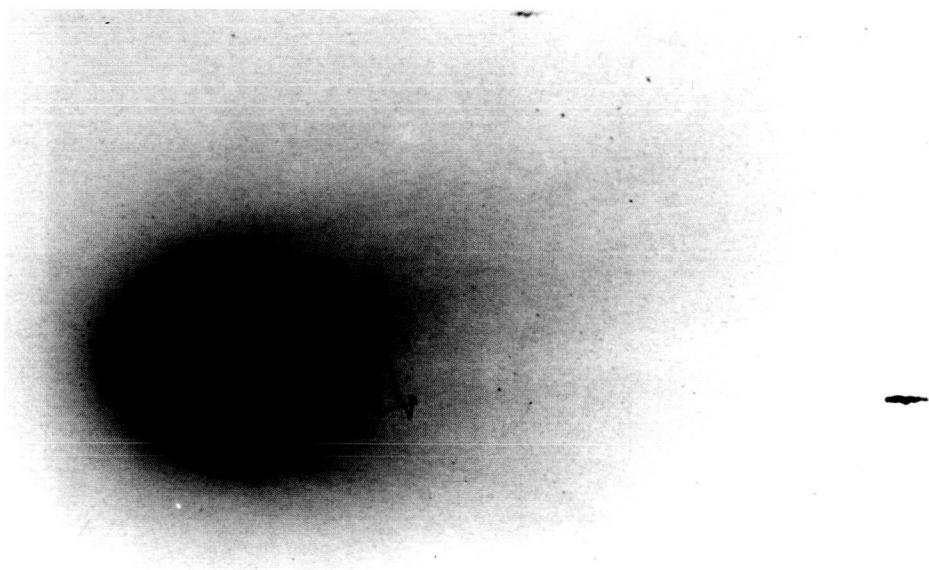


Figure 358-2. 1910 May 12.982; exposure 13 minutes; $r = 0.77$, $\Delta = 0.32$, $\theta = 36^\circ$, $\alpha = 129^\circ$, $S = 4.6$ E3

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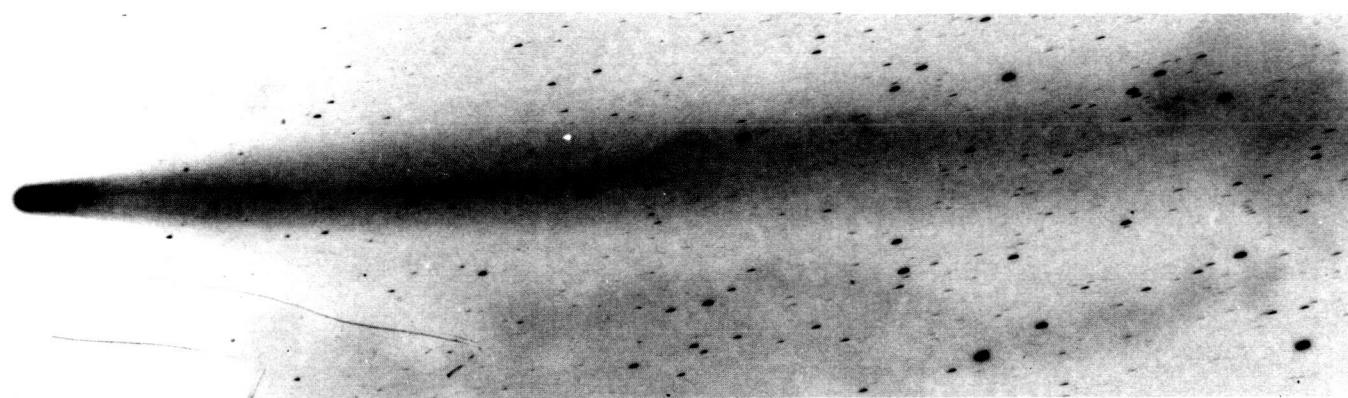


Figure 359. 1910 May 13.105; exposure 48 minutes; $r = 0.77$, $\Delta = 0.32$, $\theta = 35^\circ$, $\alpha = 129^\circ$, $S = 9.6$ E4

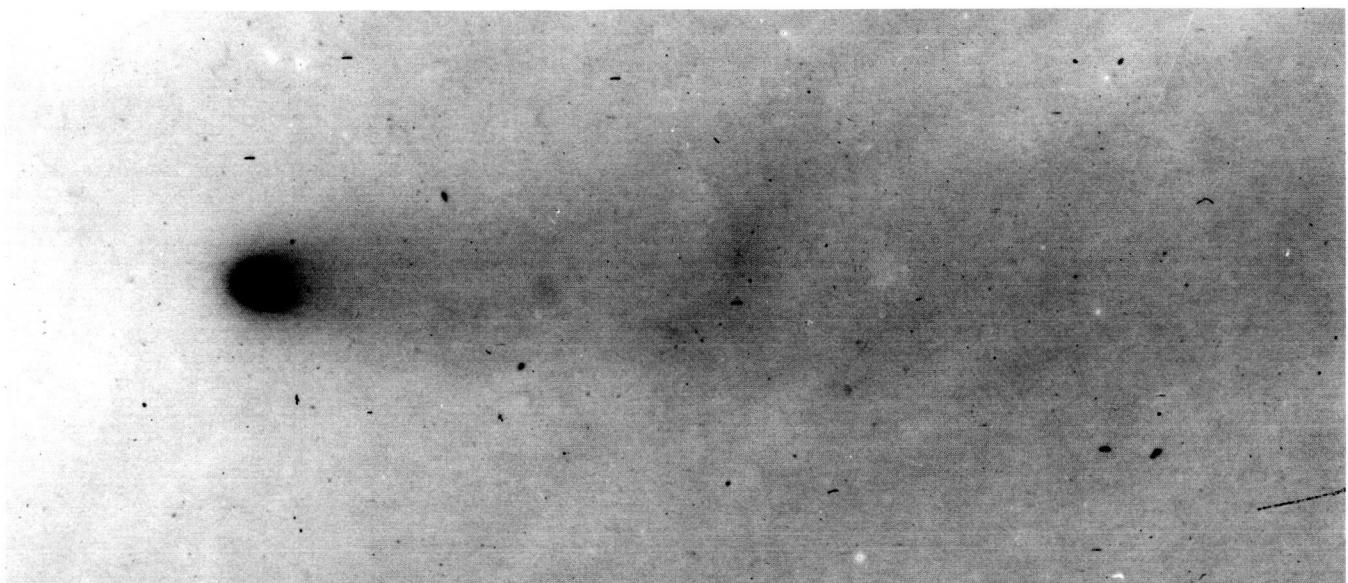


Figure 361. 1910 May 13.338; exposure 15 minutes; $r = 0.77$, $\Delta = 0.31$, $\theta = 35^\circ$, $\alpha = 131^\circ$, $S = 2.2$ E4

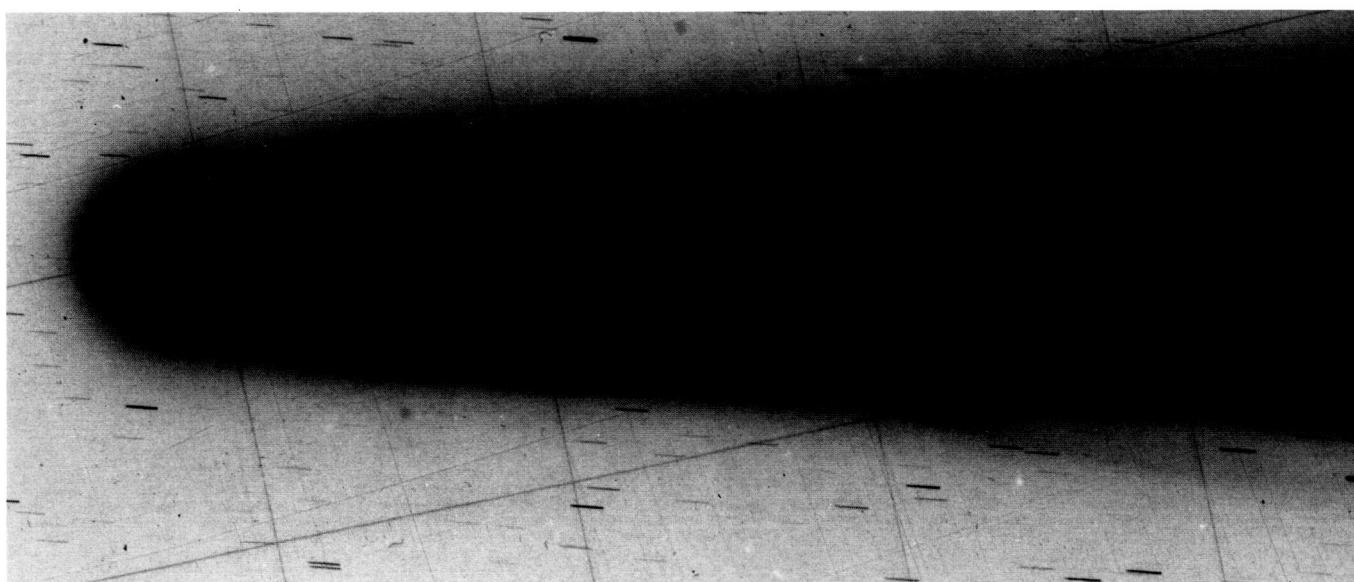


Figure 362. 1910 May 13.631; exposure 40 minutes; $r = 0.78$, $\Delta = 0.30$, $\theta = 34^\circ$, $\alpha = 132^\circ$, $S = 2.0$ E4

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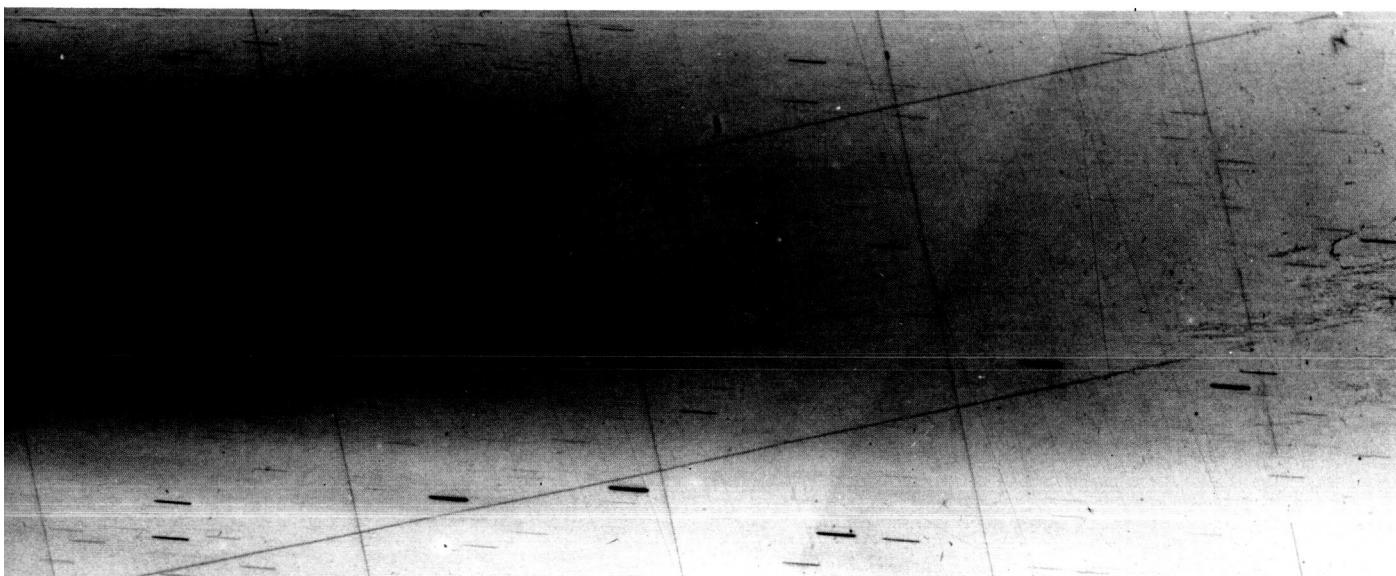
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Figure 360. 1910 May 13.108; exposure 40 minutes; $r = 0.77$, $\Delta = 0.32$, $\theta = 35^\circ$, $\alpha = 129^\circ$, $S = 3.0 \text{ E}4$



Figure 363. 1910 May 13.864; exposure 30 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 6.9 \text{ E}4$



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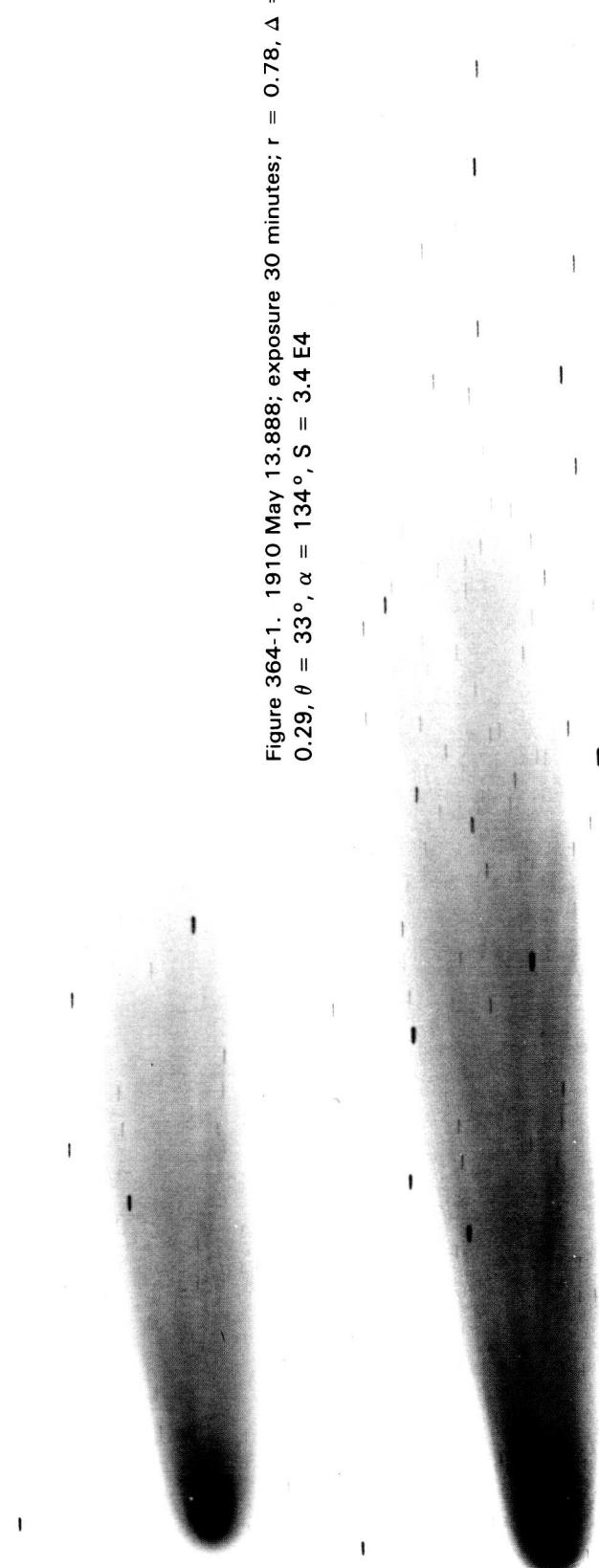


Figure 364-1. 1910 May 13.888; exposure 30 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 3.4$ E4

Figure 364-2. 1910 May 13.888; exposure 30 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 3.4$ E4



Figure 364-3. 1910 May 13.888; exposure 30 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 3.4$ E4

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Figure 365-1. 1910 May 13.904; exposure 10 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 3.4$ E4

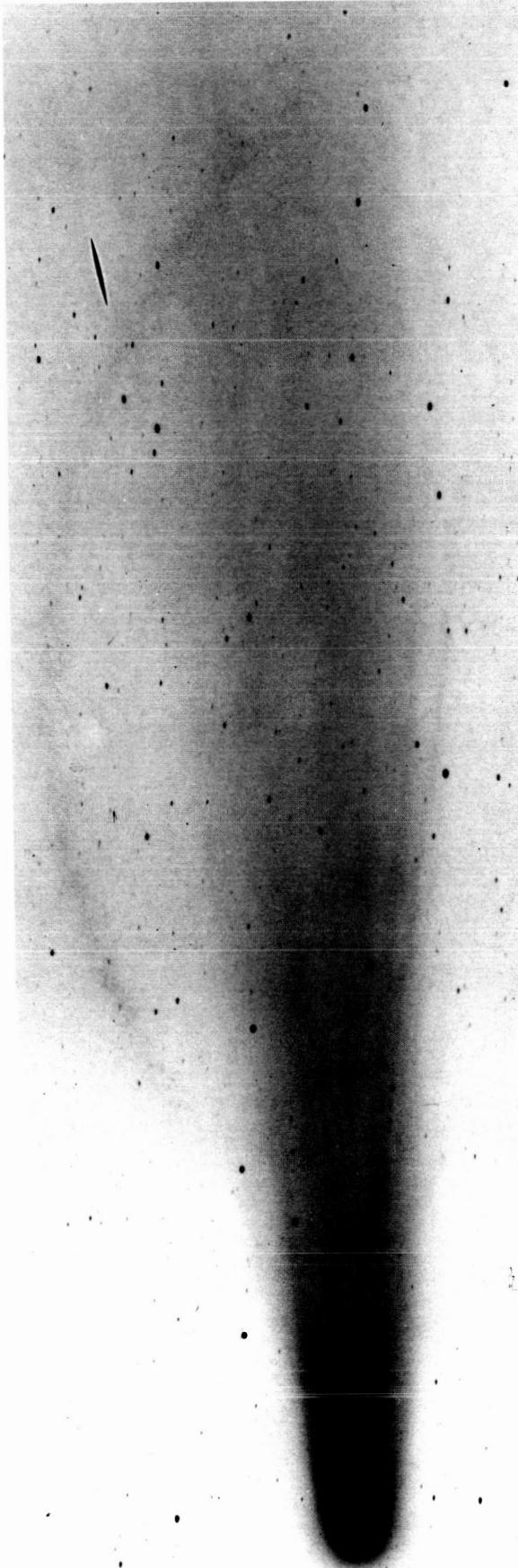


Figure 365-2. 1910 May 13.904; exposure 10 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 3.4$ E4

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Figure 366. 1910 May 13.946; exposure 29 minutes; $r = 0.78$, $\Delta = 0.29$,

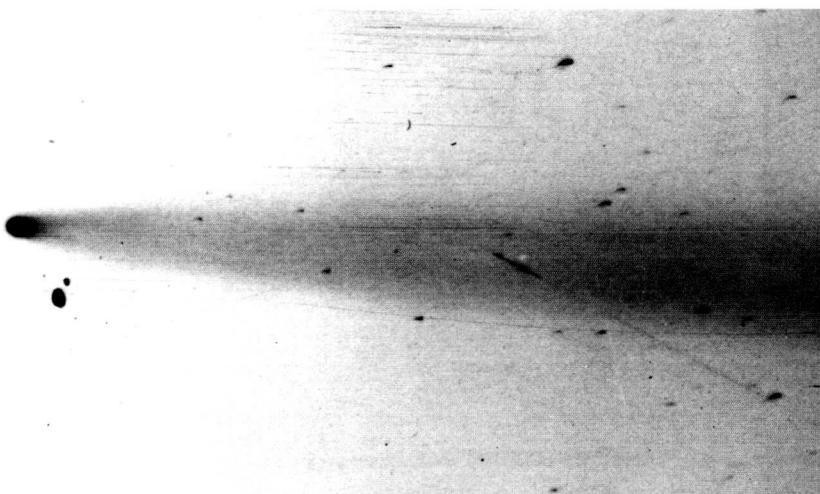


Figure 367. 1910 May 13.949; exposure 37 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$,

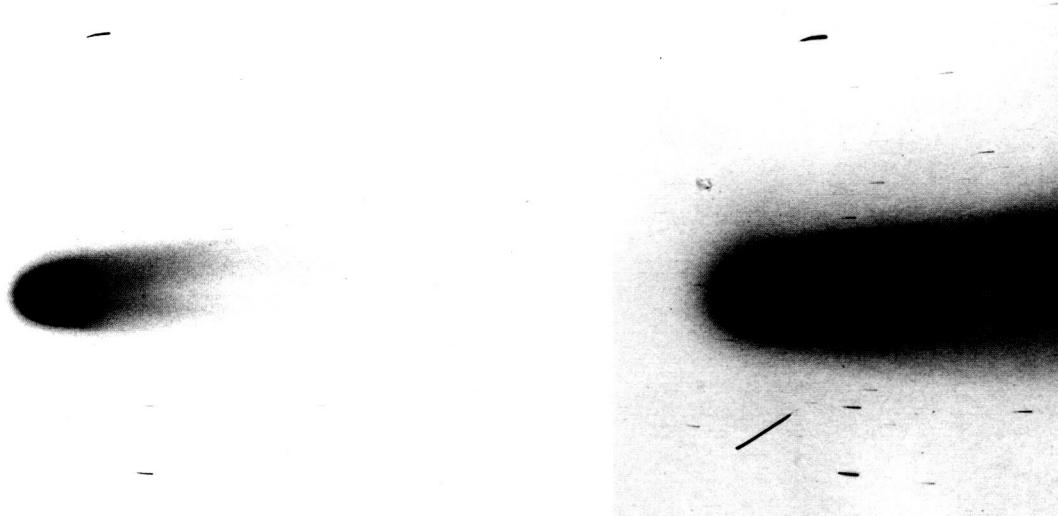


Figure 368-1. 1910 May 13.956; exposure 39 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$,
 $S = 2.5 E4$

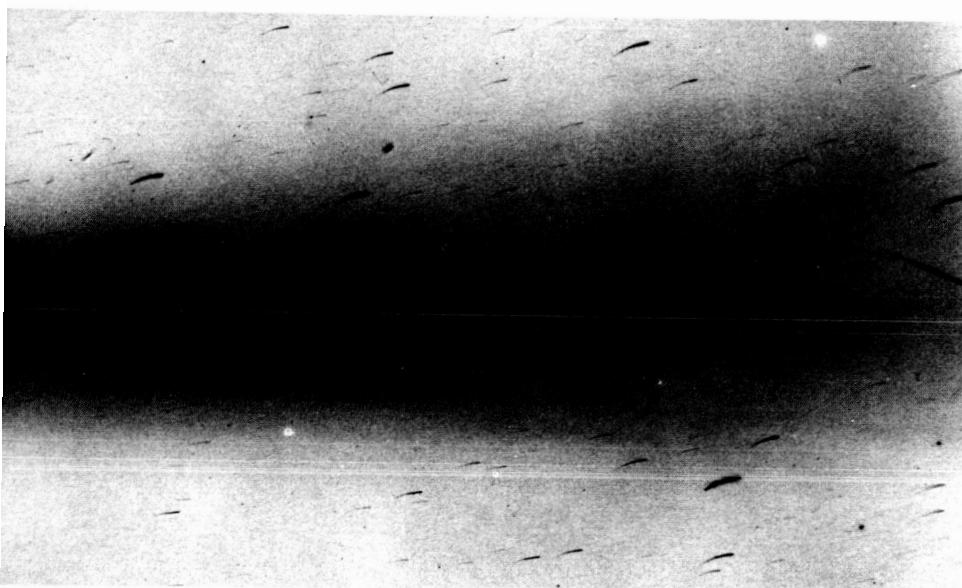
Figure 368-2. 1910 May 13.956; expo

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$\theta = 33^\circ, \alpha = 134^\circ, S = 1.1 \text{ E}5$

$\alpha = 134^\circ, S = 8.2 \text{ E}4$



39 minutes; $r = 0.78, \Delta = 0.29, \theta = 33^\circ, \alpha = 134^\circ, S = 2.5 \text{ E}4$

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Figure 369-1. 1910 May 13.975; exposure 43 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 2.8 E4$



Figure 369-2. 1910 May 13.975; exposure 43 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 2.8 E4$



Figure 370a. 1910 May 13.881; exposure 1 minute; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 3.2 E3$

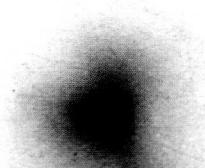


Figure 370b. 1910 May 13.879; exposure 2 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 3.2 E3$

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Figure 371-1. 1910 May 13.906; exposure 32 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 6.4$ E3

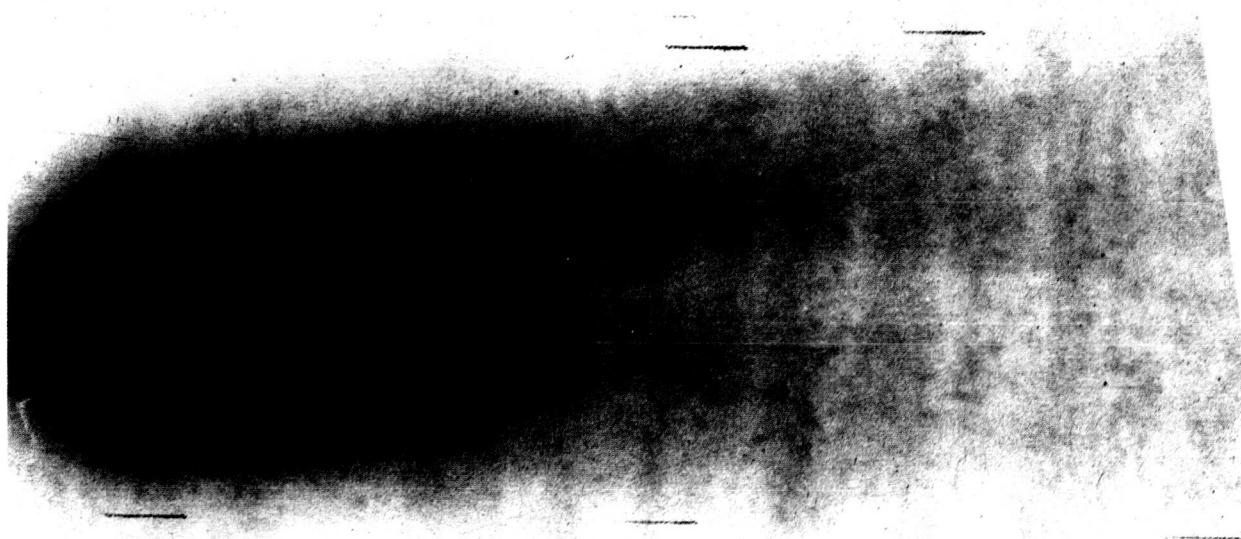


Figure 371-2. 1910 May 13.906; exposure 32 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 6.4$ E3

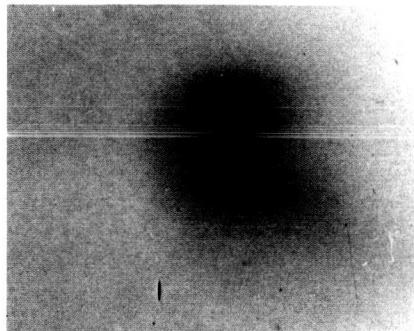


Figure 372. 1910 May 13.975; exposure 2 minutes;
 $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 3.9$ E3

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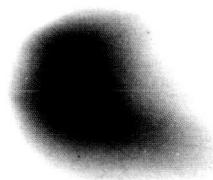


Figure 373-1. 1910 May 13.978; exposure 35 minutes; $r = 0.78$,
 $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 4.1 \text{ E}3$

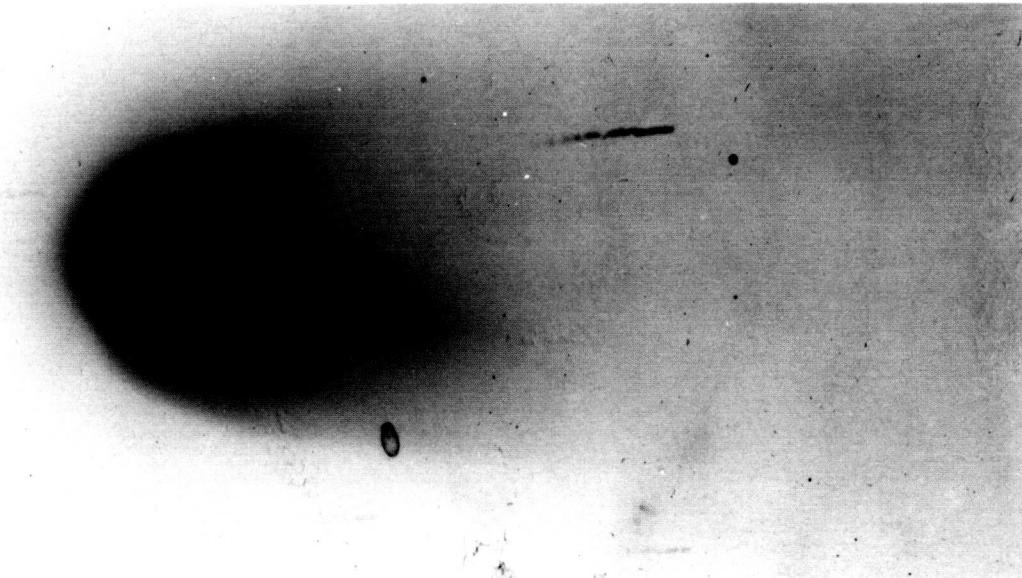


Figure 373-2. 1910 May 13.978; exposure 35 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 4.1 \text{ E}3$

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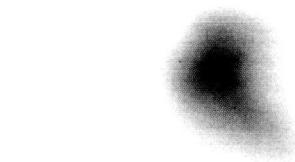


Figure 374-1. 1910 May 13.994; exposure 6 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, S = 4.1 E3



Figure 374-2. 1910 May 13.994; exposure 6 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, S = 4.1 E3

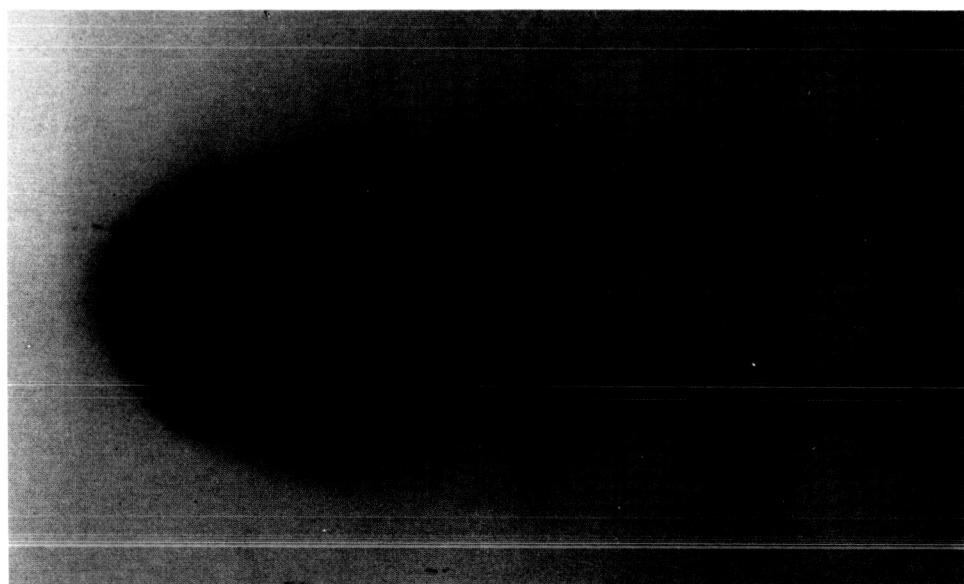


Figure 374-3. 1910 May 13.994; exposure 6 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, S = 4.1 E3

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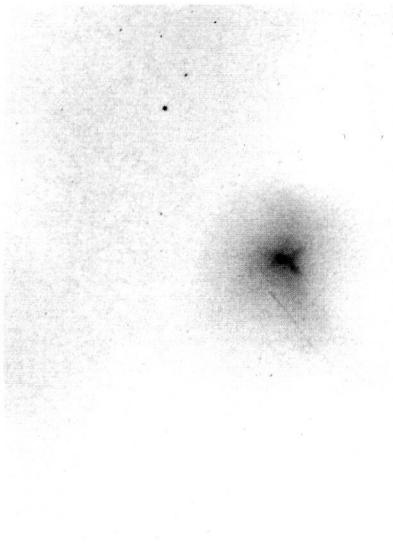


Figure 375-1. 1910 May 13.997; exposure 0.25 minute; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 4.1 \text{ E}3$

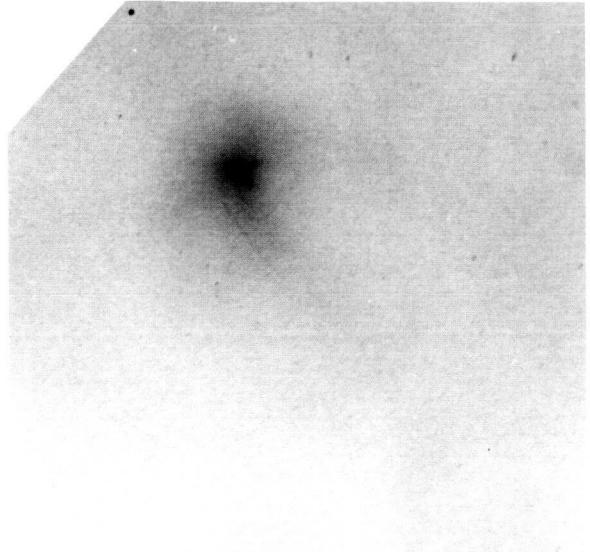


Figure 375-2. 1910 May 13.997; exposure 0.25 minute; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 4.1 \text{ E}3$

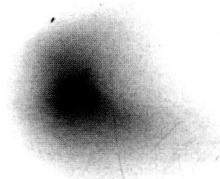


Figure 376-1. 1910 May 13.999; exposure 1 minute; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 4.1 \text{ E}3$

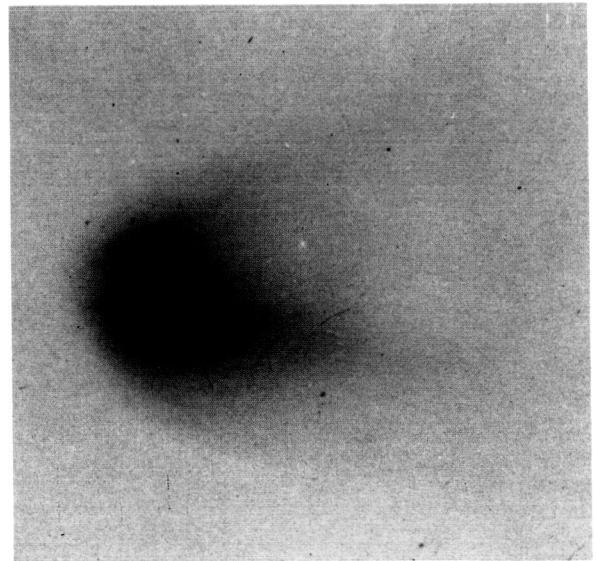


Figure 376-2. 1910 May 13.999; exposure 1 minute; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 4.1 \text{ E}3$

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Figure 377. 1910 May 14.330; exposure 17 minutes; $r = 0.79$, $\Delta = 0.27$, $\theta = 32^\circ$, $\alpha = 136^\circ$, $S = 4.0 \text{ E}4$



Figure 378-1. 1910 May 14.460;
exposure 28 minutes; $r = 0.79$,
 $\Delta = 0.27$, $\theta = 31^\circ$, $\alpha = 137^\circ$,
 $S = 2.4 \text{ E}4$

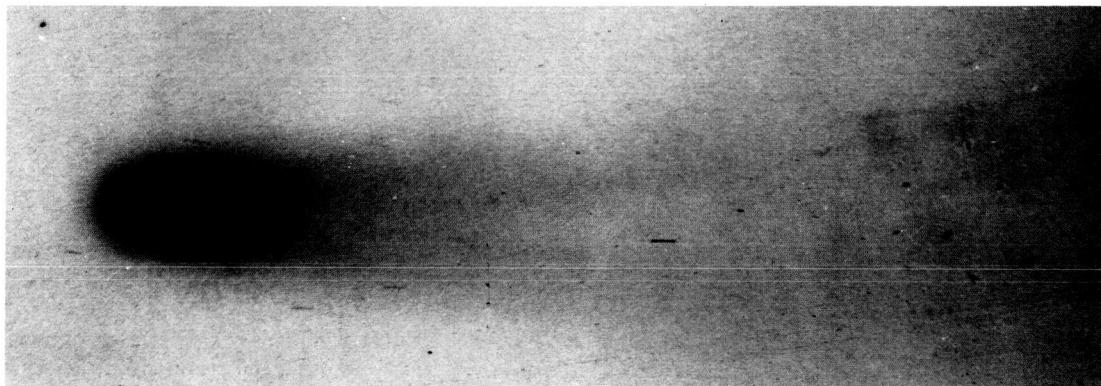


Figure 378-2. 1910 May 14.460; exposure 28 minutes; $r = 0.79$, $\Delta = 0.27$, $\theta = 31^\circ$, $\alpha = 137^\circ$,
 $S = 2.4 \text{ E}4$

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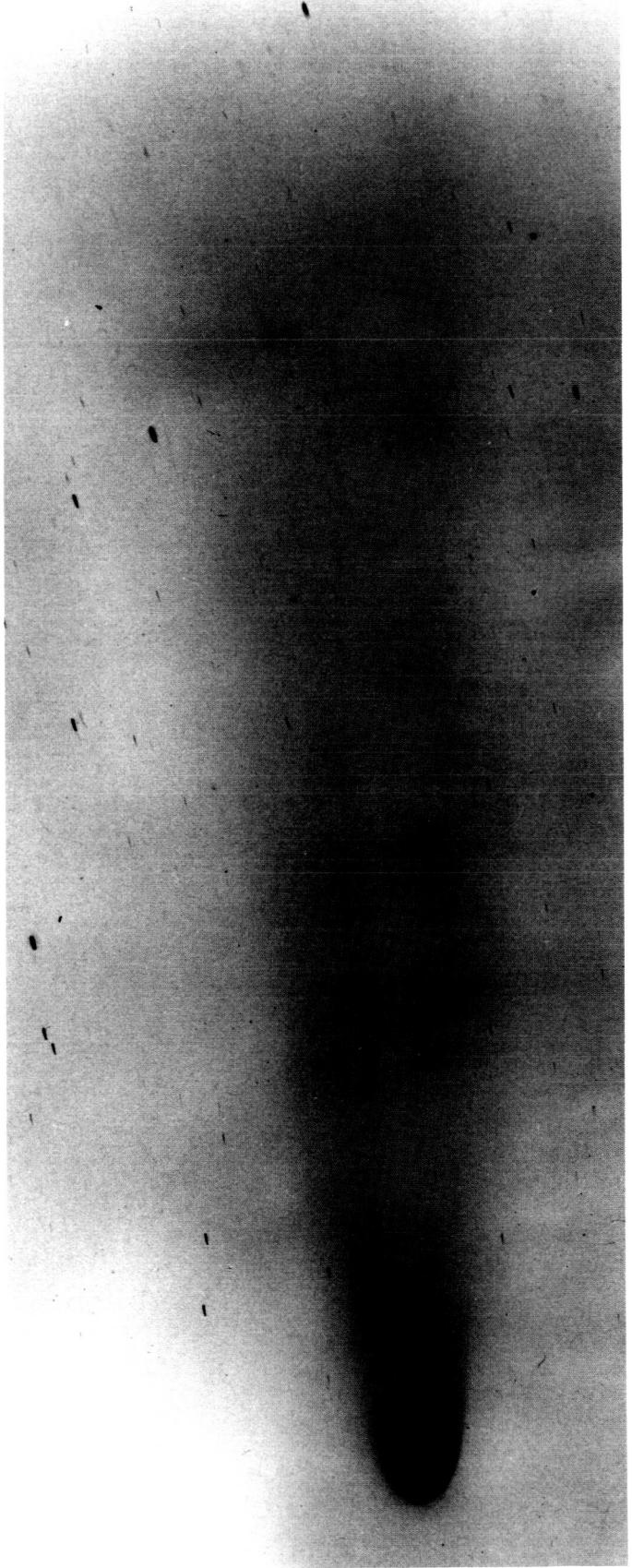


Figure 380-2. 1910 May 14.964; exposure 12 minutes; $r = 0.79$, $\Delta = 0.25$, $\theta = 29^\circ$, $\alpha = 140^\circ$, $S = 2.2 \text{ E}4$

Figure 380-1. 1910 May 14.964; exposure 12 minutes; $r = 0.79$, $\Delta = 0.25$, $\theta = 29^\circ$, $\alpha = 140^\circ$, $S = 2.2 \text{ E}4$

Figure 379. 1910 May 14.469; exposure 60 minutes; $r = 0.79$, $\Delta = 0.27$, $\theta = 31^\circ$, $\alpha = 137^\circ$, $S = 1.6 \text{ E}5$

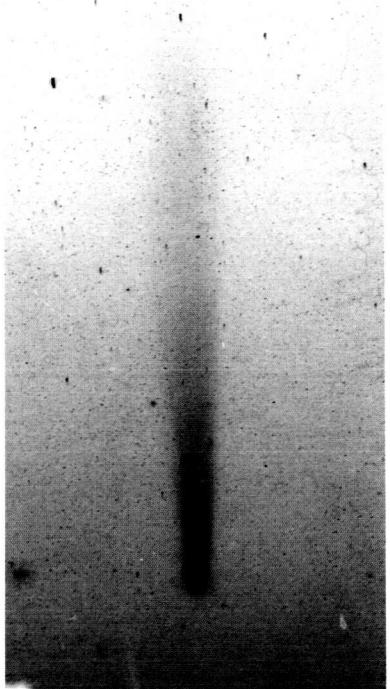


Figure 379. 1910 May 14.469; exposure 60 minutes; $r = 0.79$, $\Delta = 0.27$, $\theta = 31^\circ$, $\alpha = 137^\circ$, $S = 1.6 \text{ E}5$

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Figure 381-1. 1910 May 14.978; exposure 30 minutes; $r = 0.79$, $\Delta = 0.25$, $\theta = 29^\circ$, $\alpha = 141^\circ$, $S = 2.5 \text{ E}4$

Figure 382. 1910 May 14.004; exposure 2 minutes; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 4.1 \text{ E}3$

Figure 383. 1910 May 14.005; exposure 0.50 minute; $r = 0.78$, $\Delta = 0.29$, $\theta = 33^\circ$, $\alpha = 134^\circ$, $S = 4.1 \text{ E}3$

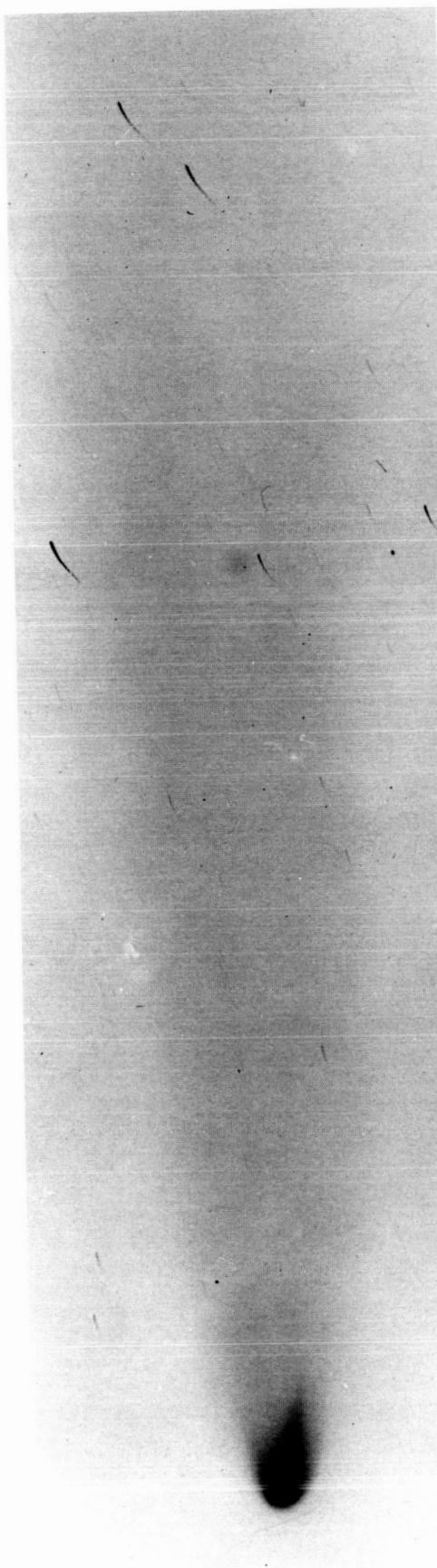


Figure 381-2. 1910 May 14.978; exposure 30 minutes; $r = 0.79$, $\Delta = 0.25$, $\theta = 29^\circ$, $\alpha = 141^\circ$, $S = 2.5 \text{ E}4$

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Figure 384-1. 1910 May 14.574; exposure 6 minutes; $r = 0.79$, $\Delta = 0.27$, $\theta = 31^\circ$, $\alpha = 138^\circ$, $S = 5.9$ E3

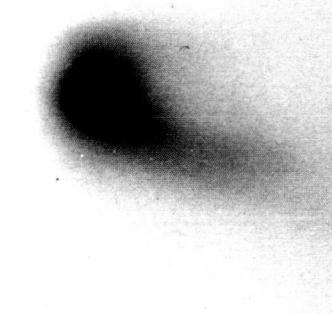


Figure 384-2. 1910 May 14.574; exposure 6 minutes; $r = 0.79$, $\Delta = 0.27$, $\theta = 31^\circ$, $\alpha = 138^\circ$, $S = 5.9$ E3

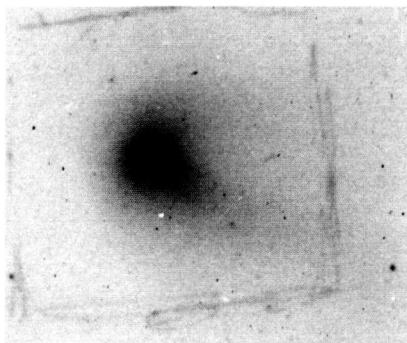


Figure 385. 1910 May 14.581; exposure 0.50 minute; $r = 0.79$, $\Delta = 0.27$, $\theta = 31^\circ$, $\alpha = 138^\circ$, $S = 5.9$ E3

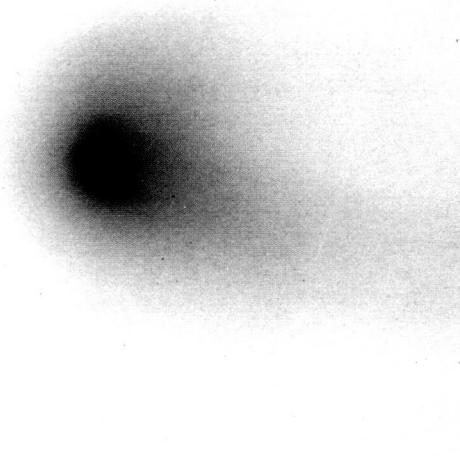


Figure 386. 1910 May 14.980; exposure 25 minutes; $r = 0.79$, $\Delta = 0.25$, $\theta = 29^\circ$, $\alpha = 141^\circ$, $S = 3.6$ E3

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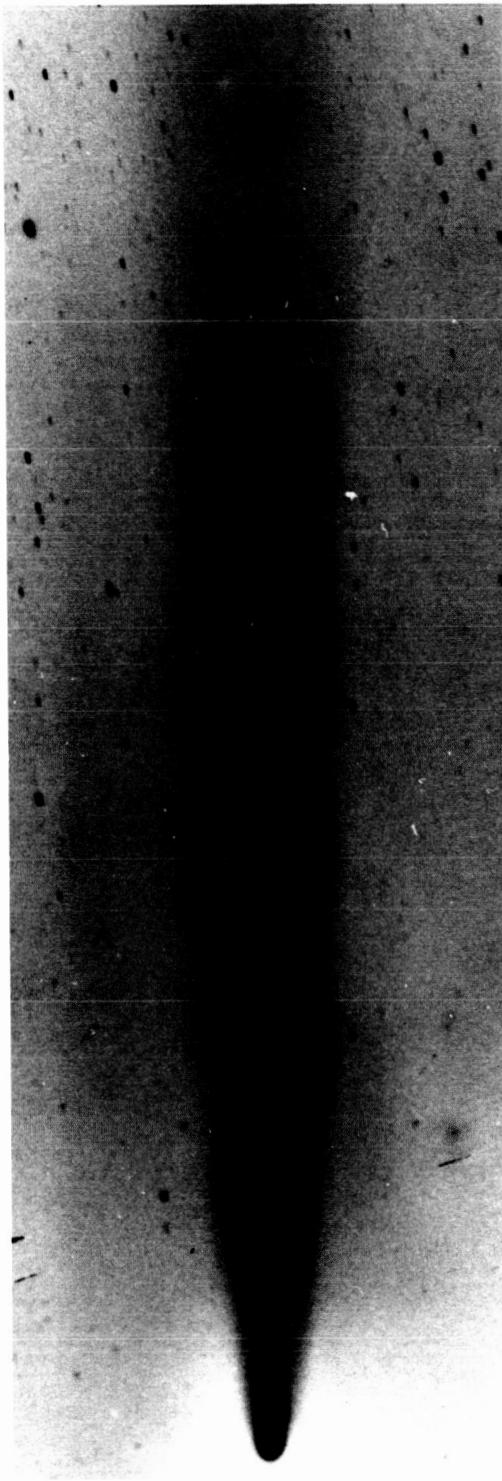


Figure 387. 1910 May 15.114; exposure 25 minutes; $r = 0.80$, $\Delta = 0.25$, $\theta = 29^\circ$, $\alpha = 142^\circ$, $S = 7.5 \text{ E}4$

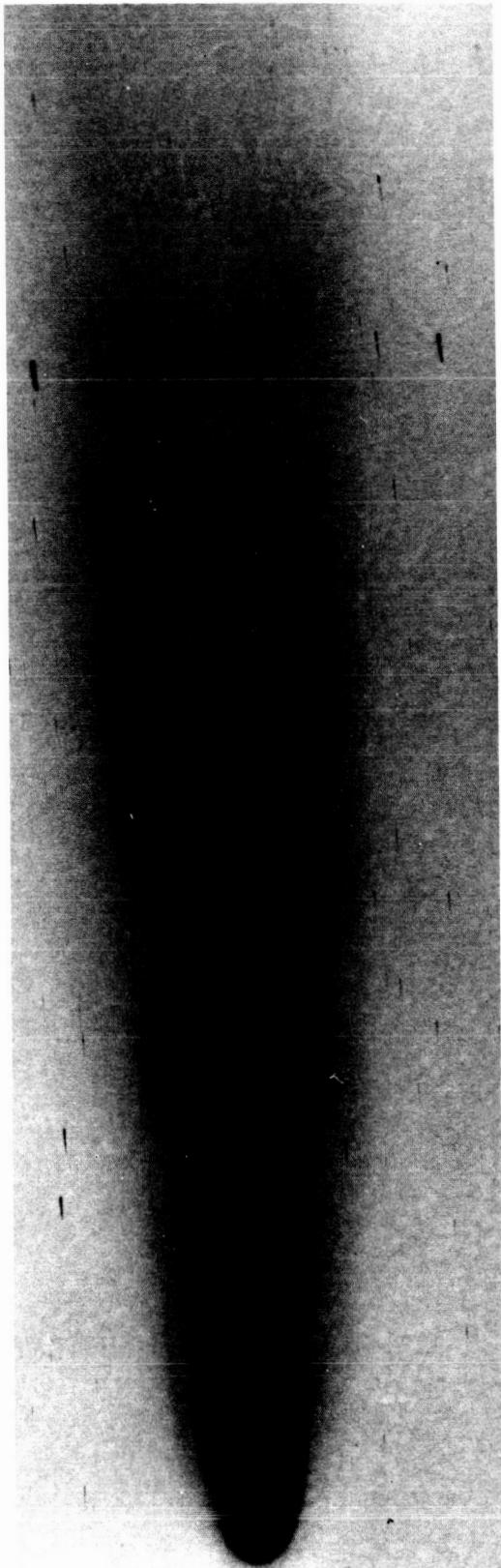


Figure 388. 1910 May 15.115; exposure 28 minutes; $r = 0.80$, $\Delta = 0.25$, $\theta = 29^\circ$, $\alpha = 142^\circ$, $S = 2.3 \text{ E}4$

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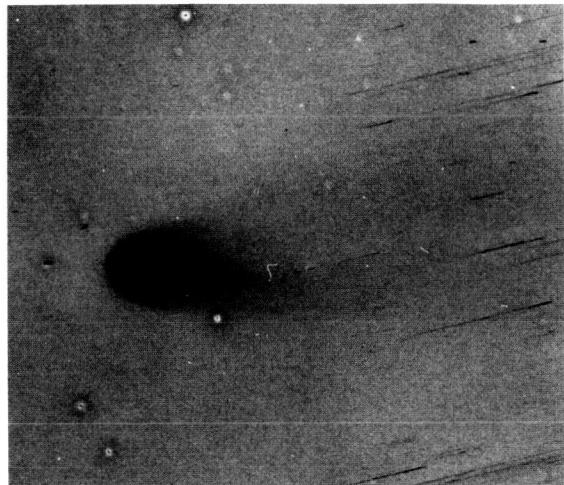


Figure 389. 1910 May 15.128; exposure 7 minutes; $r = 0.80$, $\Delta = 0.25$, $\theta = 29^\circ$, $\alpha = 142^\circ$, $S = 2.3 \text{ E}4$



Figure 390-1. 1910 May 15.477; exposure 22 minutes; $r = 0.80$, $\Delta = 0.24$, $\theta = 27^\circ$, $\alpha = 144^\circ$, $S = 2.1 \text{ E}4$

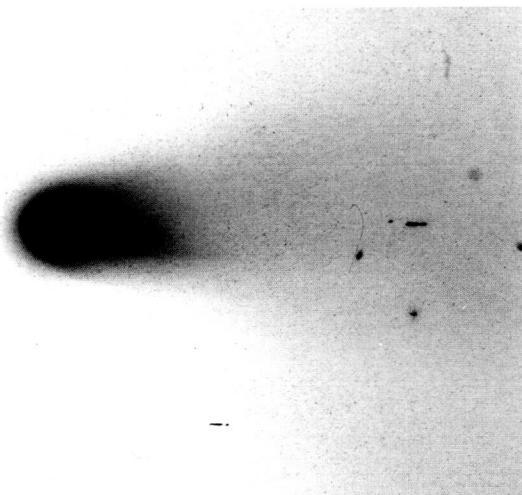


Figure 390-2. 1910 May 15.477; exposure 22 minutes; $r = 0.80$, $\Delta = 0.24$, $\theta = 27^\circ$, $\alpha = 144^\circ$, $S = 2.1 \text{ E}4$

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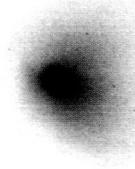


Figure 391-1. 1910 May 15.988; exposure 7 minutes; $r = 0.81$, $\Delta = 0.22$, $\theta = 24^\circ$, $\alpha = 148^\circ$, S = 3.2 E3

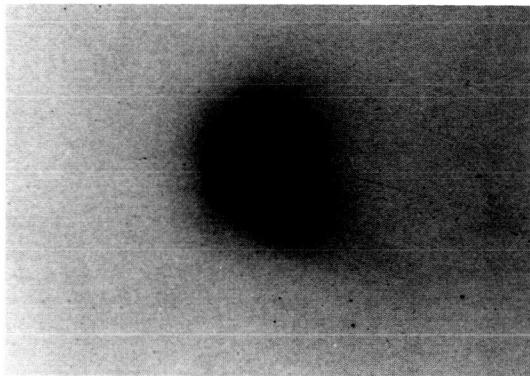


Figure 391-2. 1910 May 15.988; exposure 7 minutes; $r = 0.81$, $\Delta = 0.22$, $\theta = 24^\circ$, $\alpha = 148^\circ$, S = 3.2 E3

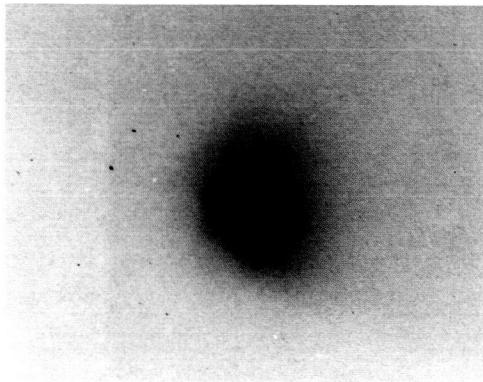


Figure 392. 1910 May 15.993; exposure 4 minutes; $r = 0.81$, $\Delta = 0.22$, $\theta = 24^\circ$, $\alpha = 148^\circ$, S = 3.2 E3

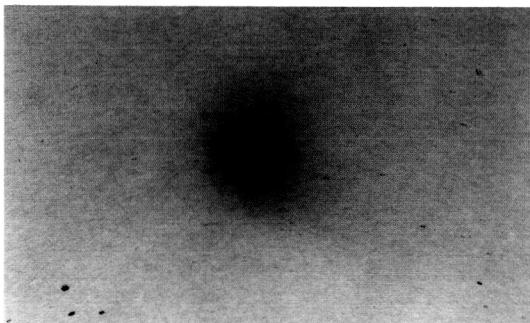


Figure 393. 1910 May 15.996; exposure 1 minute; $r = 0.81$, $\Delta = 0.22$, $\theta = 24^\circ$, $\alpha = 148^\circ$, S = 3.5 E3

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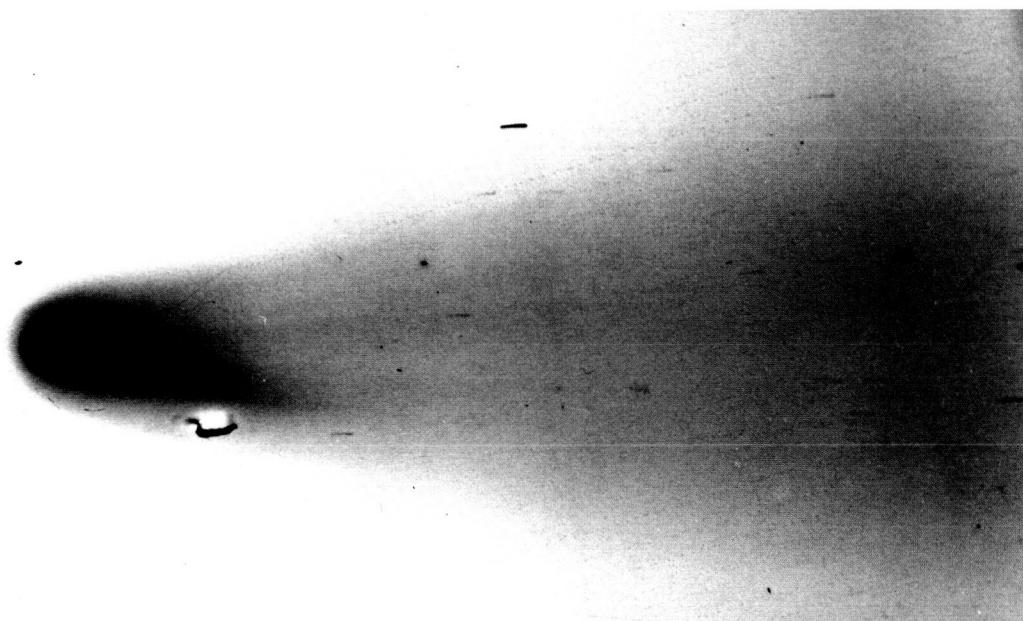


Figure 394. 1910 May 16.476; exposure 24 minutes; $r = 0.81$, $\Delta = 0.21$, $\theta = 21^\circ$, $\alpha = 153^\circ$,
 $S = 1.8$ E4

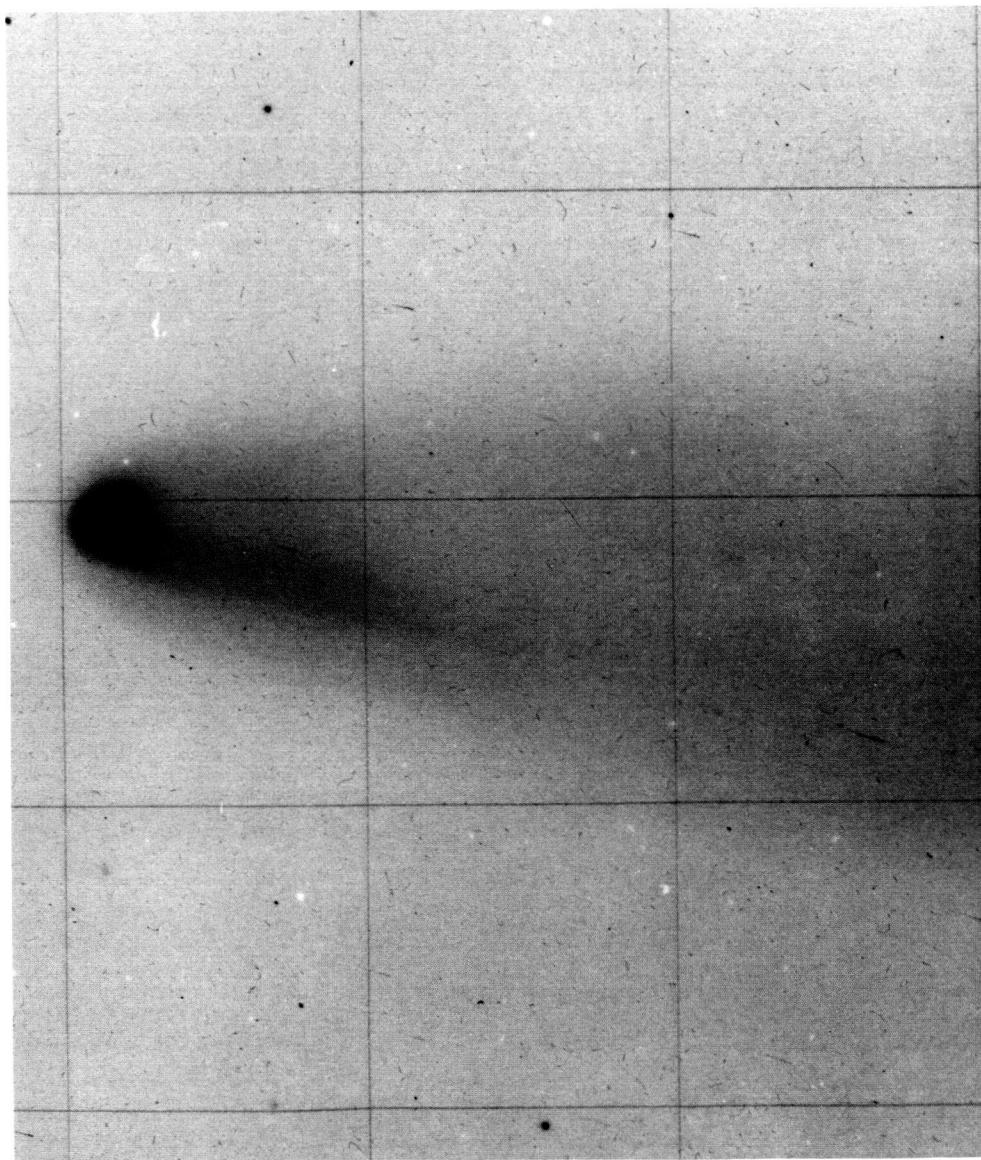


Figure 395. 1910 May 16.641; exposure 12 minutes; $r = 0.82$, $\Delta = 0.20$, $\theta = 20^\circ$,

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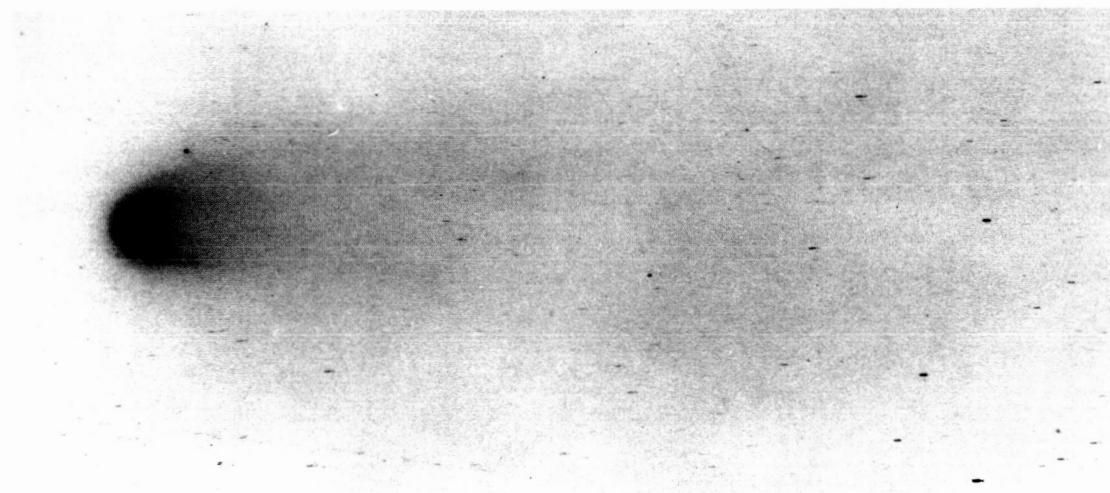
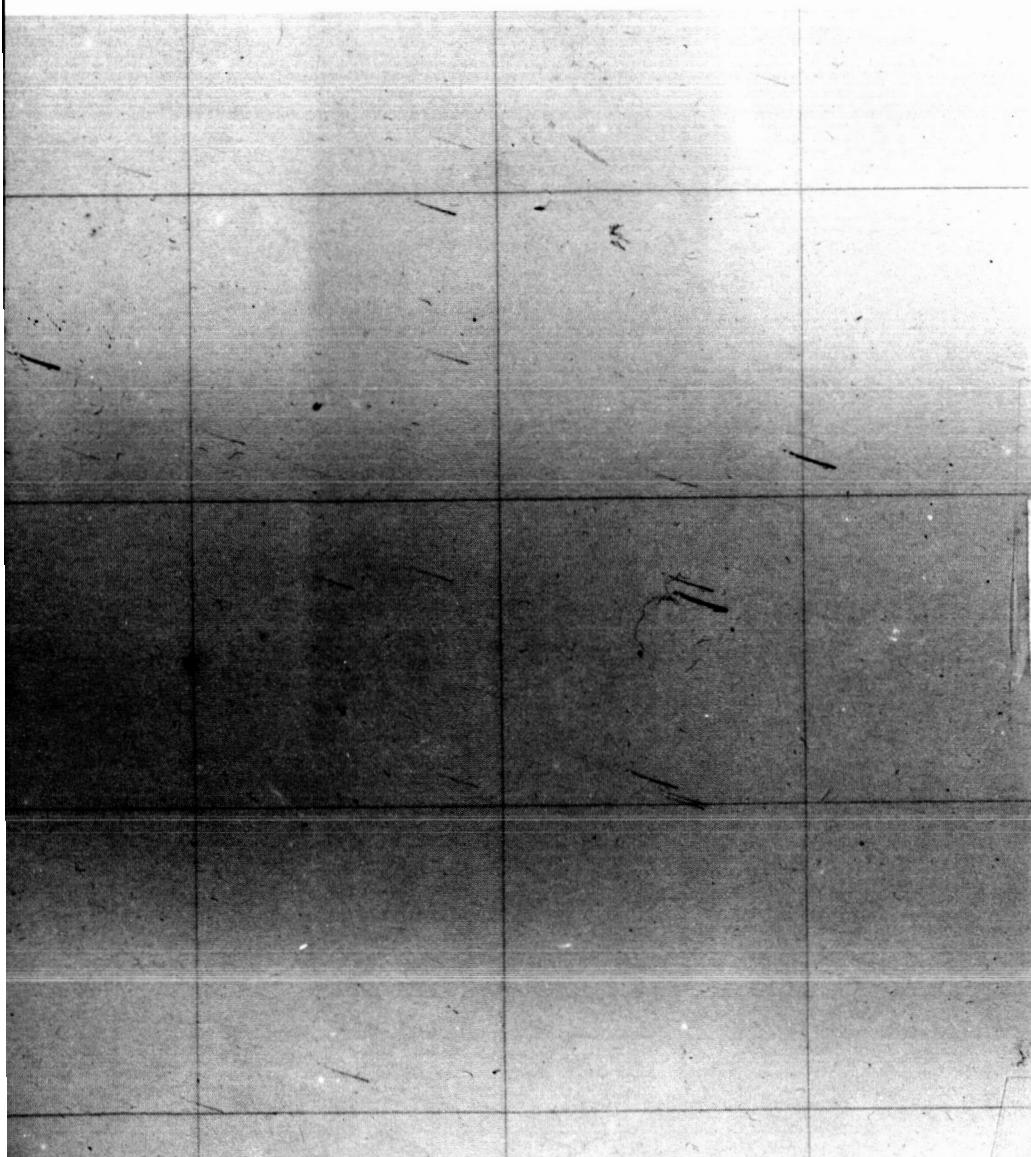


Figure 396. 1910 May 20.757; exposure 4 minutes; $r = 0.88$, $\Delta = 0.15$, $\theta = 29^\circ$, $\alpha = 145^\circ$,
 $S = 1.4 \text{ E}4$



$\alpha = 154^\circ$, $S = 1.3 \text{ E}4$

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Figure 397-1. 1910 May 20.678; exposure 6 minutes; $r = 0.88$, $\Delta = 0.15$, $\theta = 28^\circ$, $\alpha = 147^\circ$,
 $S = 2.2$ E3

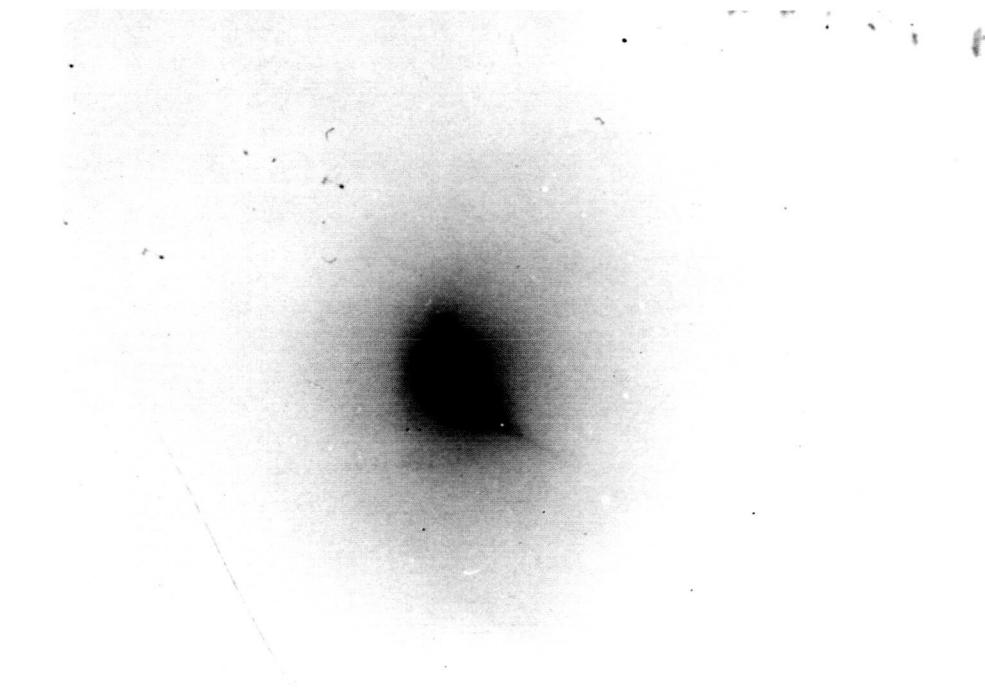


Figure 397-2. 1910 May 20.678; exposure 6 minutes; $r = 0.88$, $\Delta = 0.15$, $\theta = 28^\circ$, $\alpha = 147^\circ$,
 $S = 2.2$ E3



Figure 398. 1910 May 21.017; exposure 30
minutes; $r = 0.88$, $\Delta = 0.15$, $\theta = 32^\circ$, $\alpha = 141^\circ$,
 $S = 2.5$ E4

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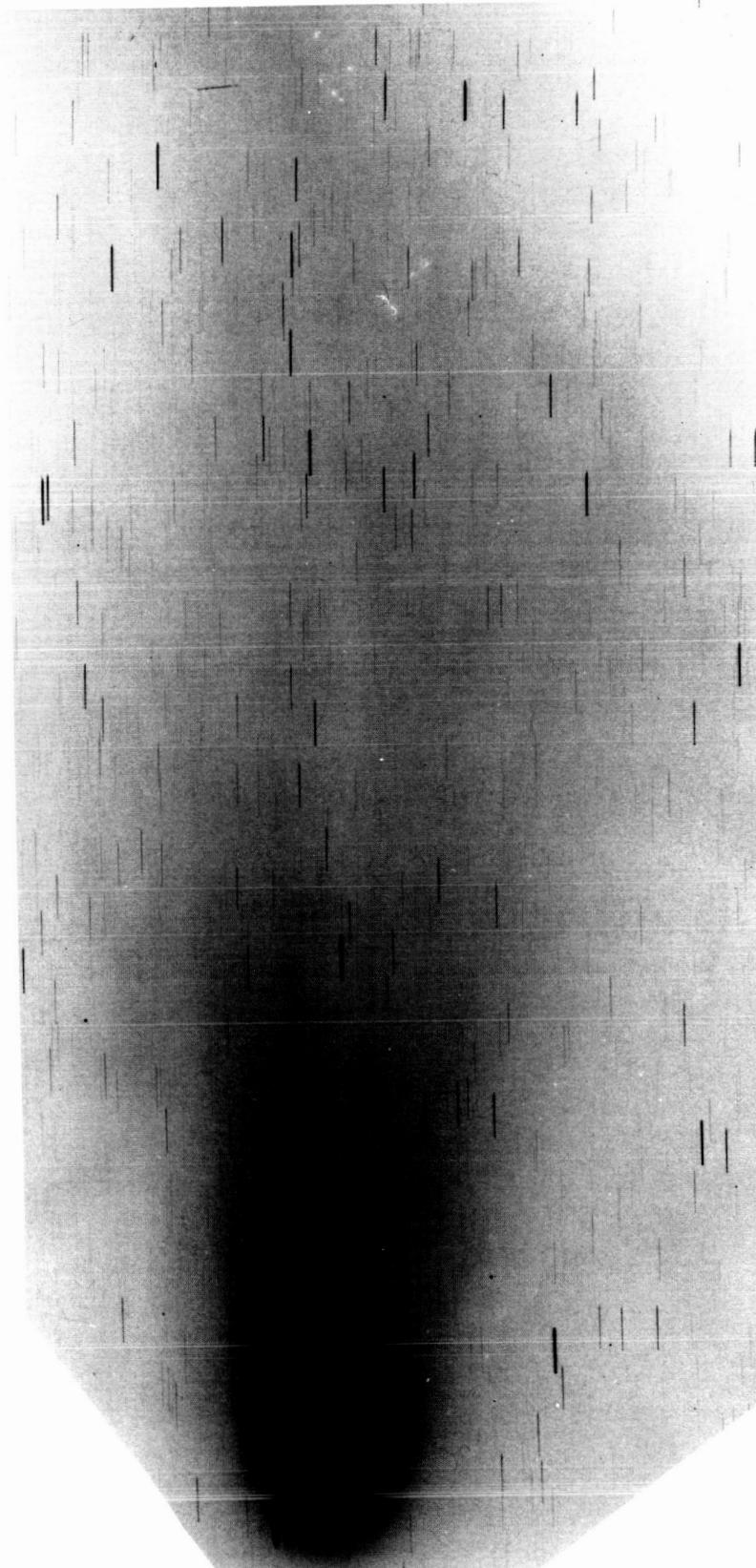


Figure 399-1. 1910 May 21.461; exposure 20 minutes;
 $r = 0.89$, $\Delta = 0.16$, $\theta = 38^\circ$, $\alpha = 134^\circ$, $S = 1.7 \text{ E}4$

Figure 399-2. 1910 May 21.461; exposure 20 minutes; $r = 0.89$, $\Delta = 0.16$, $\theta = 38^\circ$, $\alpha = 134^\circ$, $S = 1.7 \text{ E}4$

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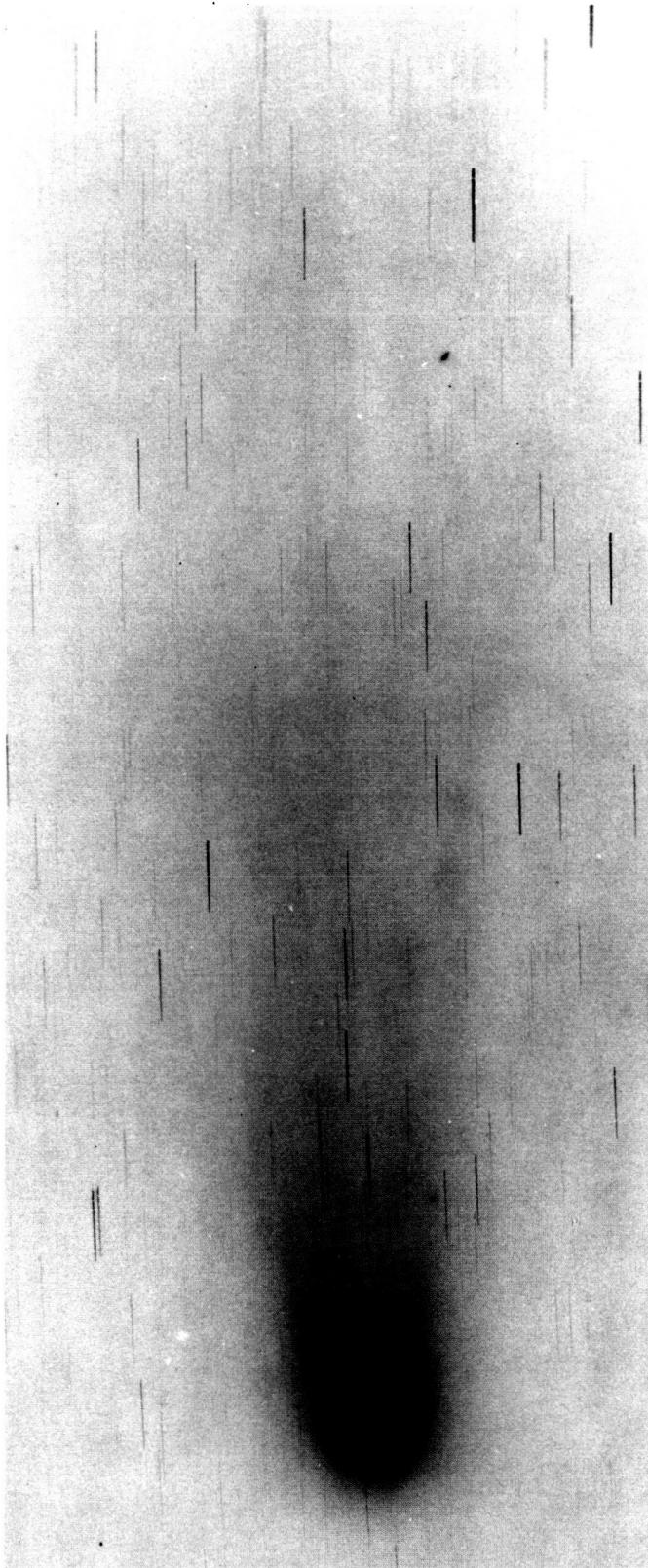


Figure 400. 1910 May 21.771; exposure 40 minutes; $r = 0.89$, $\Delta = 0.16$, $\theta = 42^\circ$, $\alpha = 130^\circ$, $S = 1.5$ E4

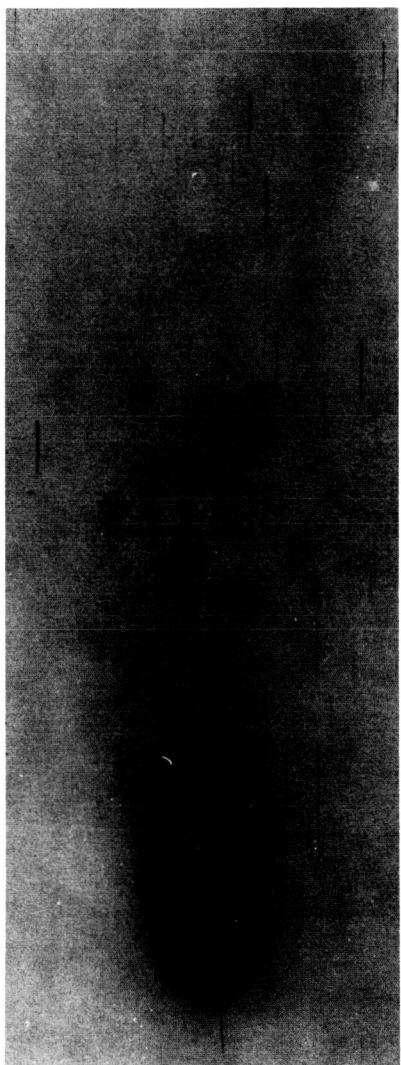


Figure 401. 1910 May 21.797; exposure 30 minutes; $r = 0.89$, $\Delta = 0.16$, $\theta = 42^\circ$, $\alpha = 130^\circ$,
 $S = 1.6$ E4

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Figure 402. 1910 May 21.019; exposure 38 minutes; $r = 0.88$, $\Delta = 0.15$, $\theta = 32^\circ$, $\alpha = 141^\circ$, $S = 7.1 \text{ E}3$



Figure 403-1. 1910 May 21.235; exposure 1 minute; $r = 0.88$, $\Delta = 0.15$, $\theta = 35^\circ$, $\alpha = 138^\circ$, $S = 3.5 \text{ E}3$

Figure 404-1. 1910 May 21.241; exposure 1 minute; $r = 0.88$, $\Delta = 0.16$, $\theta = 35^\circ$, $\alpha = 138^\circ$, $S = 3.5 \text{ E}3$

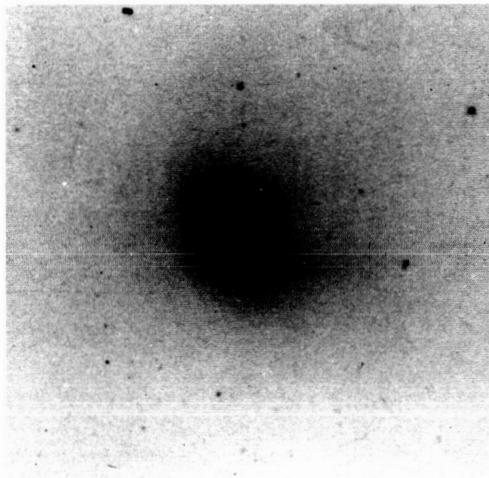


Figure 403-2. 1910 May 21.235; exposure 1 minute; $r = 0.88$, $\Delta = 0.15$, $\theta = 35^\circ$, $\alpha = 138^\circ$, $S = 3.5 \text{ E}3$

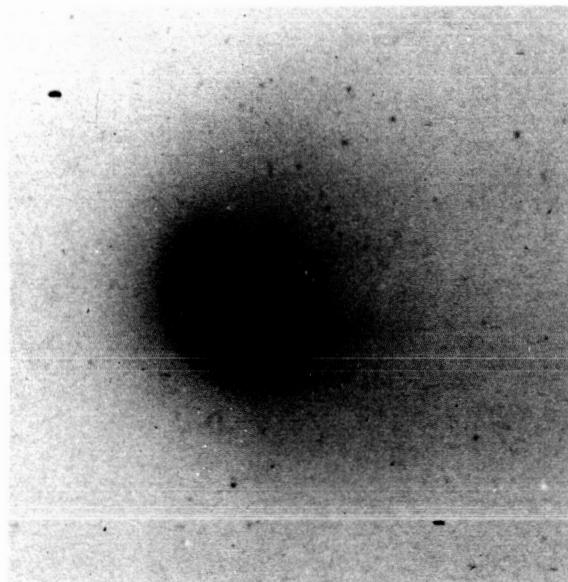


Figure 404-2. 1910 May 21.241; exposure 1 minute; $r = 0.88$, $\Delta = 0.16$, $\theta = 35^\circ$, $\alpha = 138^\circ$, $S = 3.5 \text{ E}3$

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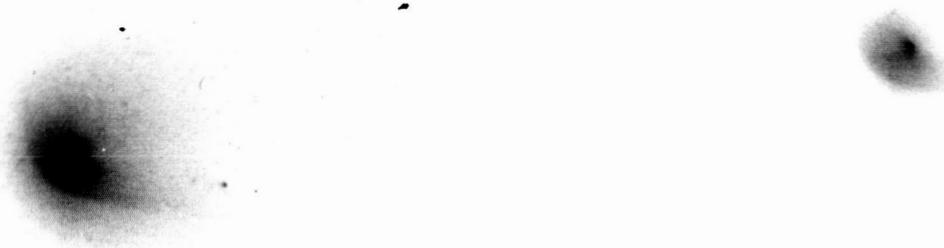


Figure 405-1. 1910 May 21.251; exposure 5 minutes; $r = 0.88$, $\Delta = 0.16$, $\theta = 35^\circ$, $\alpha = 138^\circ$, $S = 3.5$ E3

Figure 406-1. 1910 May 21.258; exposure 2 minutes; $r = 0.88$, $\Delta = 0.16$, $\theta = 36^\circ$, $\alpha = 137^\circ$, $S = 3.5$ E3

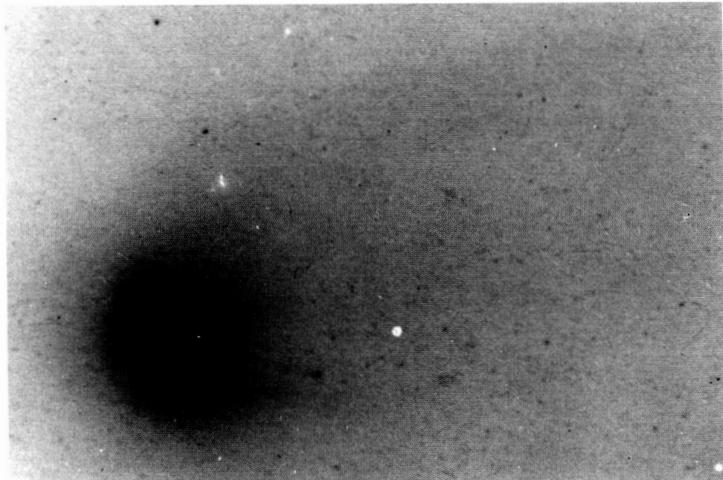


Figure 405-2. 1910 May 21.251; exposure 5 minutes; $r = 0.88$, $\Delta = 0.16$, $\theta = 35^\circ$, $\alpha = 138^\circ$, $S = 3.5$ E3

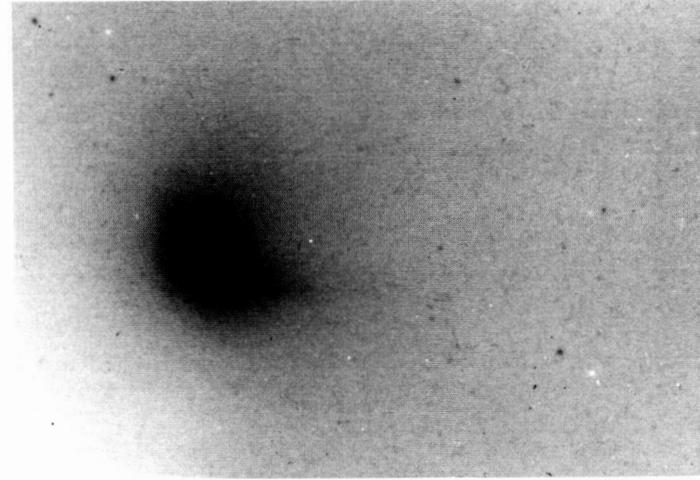


Figure 406-2. 1910 May 21.258; exposure 2 minutes; $r = 0.88$, $\Delta = 0.16$, $\theta = 36^\circ$, $\alpha = 137^\circ$, $S = 3.5$ E3

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Figure 407-1. 1910 May 21.265; exposure
2 minutes; $r = 0.88$, $\Delta = 0.16$, $\theta = 36^\circ$,
 $\alpha = 137^\circ$, $S = 3.5$ E3

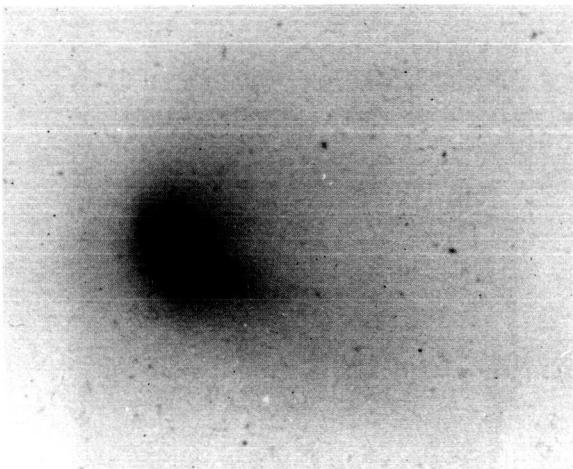


Figure 407-2. 1910 May 21.265; exposure 2
minutes; $r = 0.88$, $\Delta = 0.16$, $\theta = 36^\circ$, $\alpha = 137^\circ$,
 $S = 3.5$ E3

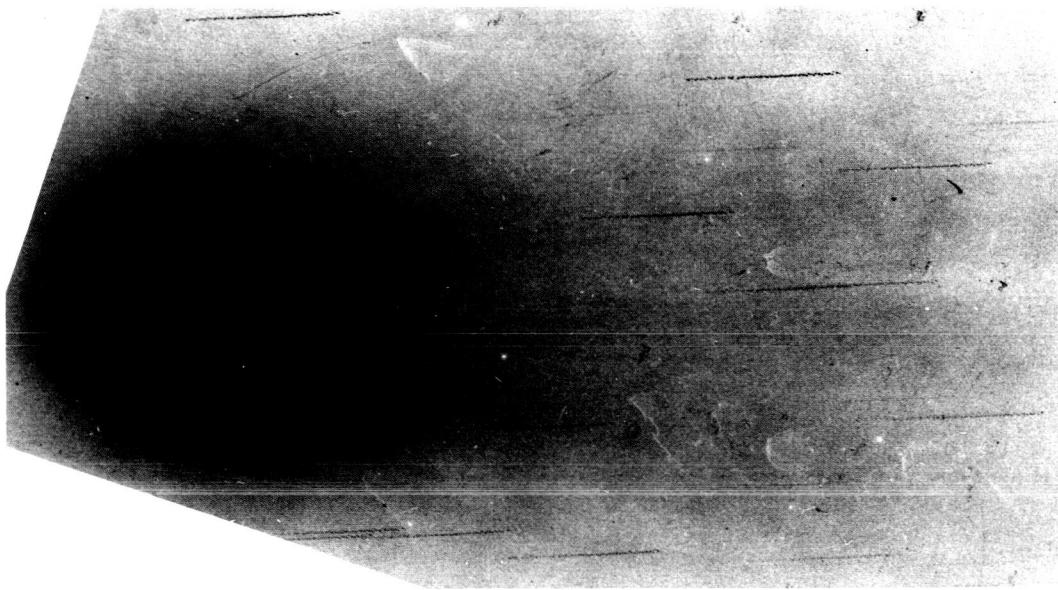


Figure 408. 1910 May 21.454; exposure 10 minutes; $r = 0.89$, $\Delta = 0.16$, $\theta = 38^\circ$, $\alpha = 135^\circ$,
 $S = 3.5$ E3

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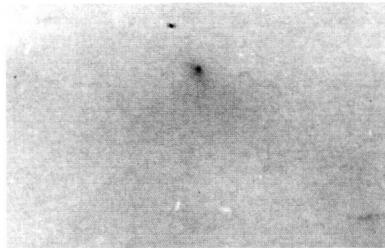


Figure 409a. 1910 May 21.651;
exposure 0.16 minute; $r = 0.89$,
 $\Delta = 0.16$, $\theta = 40^\circ$, $\alpha = 132^\circ$,
 $S = 2.2$ E3

Figure 409b. 1910 May 21.651;
exposure 0.50 minute; $r = 0.89$,
 $\Delta = 0.16$, $\theta = 40^\circ$, $\alpha = 132^\circ$,
 $S = 2.2$ E3



Figure 409c. 1910 May 21.652; exposure 1 minute;
 $r = 0.89$, $\Delta = 0.16$, $\theta = 40^\circ$, $\alpha = 132^\circ$, $S = 2.2$ E3

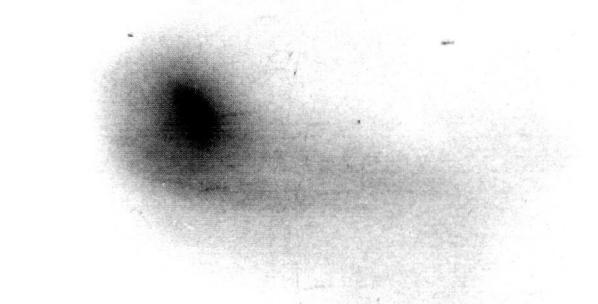


Figure 409d. 1910 May 21.653; exposure 2
minutes; $r = 0.89$, $\Delta = 0.16$, $\theta = 40^\circ$, $\alpha = 132^\circ$,
 $S = 2.2$ E3

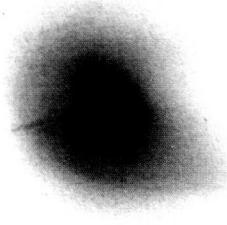


Figure 410-1. 1910 May 21.667; ex-
posure 15 minutes; $r = 0.89$, $\Delta =$
 0.16 , $\theta = 41^\circ$, $\alpha = 131^\circ$, $S = 2.2$ E3

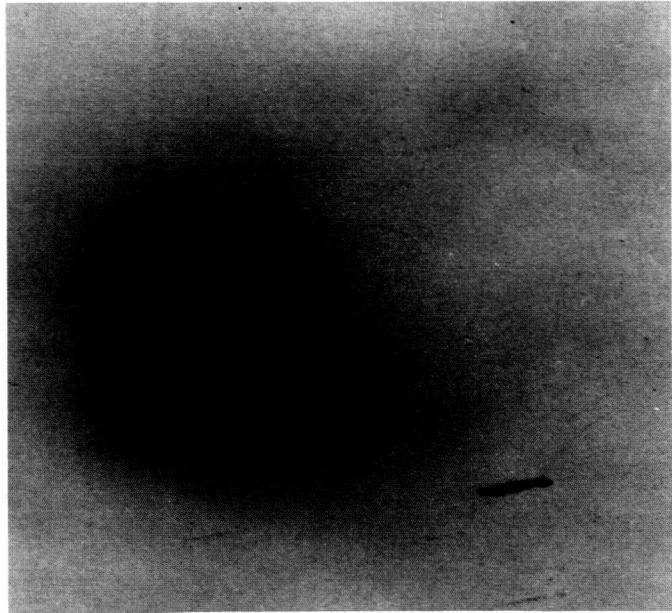


Figure 410-2. 1910 May 21.667; exposure 15 minutes; $r =$
 0.89 , $\Delta = 0.16$, $\theta = 41^\circ$, $\alpha = 131^\circ$, $S = 2.2$ E3

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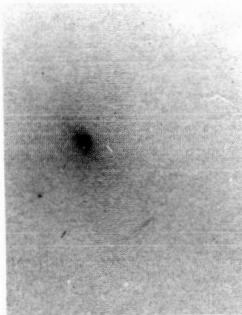


Figure 411. 1910 May 21.682; exposure 7 minutes; $r = 0.89$, $\Delta = 0.16$, $\theta = 41^\circ$, $\alpha = 131^\circ$, $S = 2.3$ E3

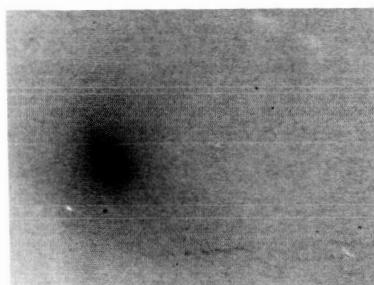


Figure 412. 1910 May 21.709; exposure 18 minutes; $r = 0.89$, $\Delta = 0.16$, $\theta = 41^\circ$, $\alpha = 131^\circ$, $S = 2.4$ E3

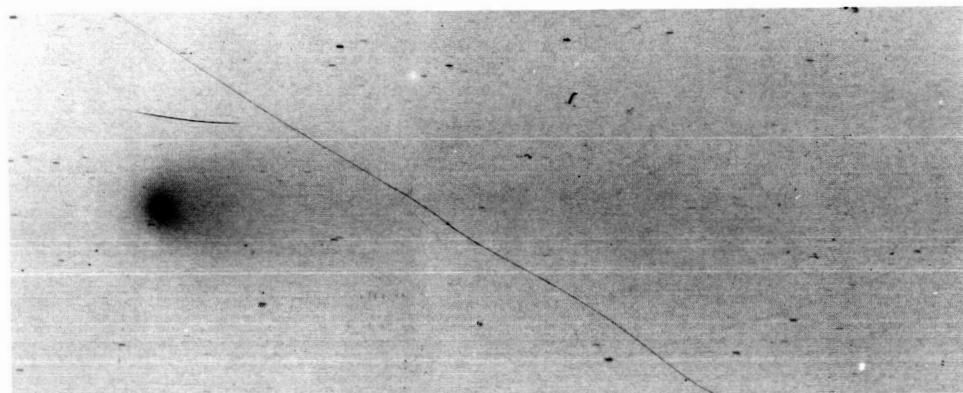


Figure 413. 1910 May 22.437; exposure 5 minutes; $r = 0.90$, $\Delta = 0.18$, $\theta = 49^\circ$, $\alpha = 121^\circ$, $S = 2.1$ E4

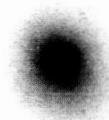


Figure 414-1. 1910 May 22.245; exposure 0.50 minute; $r = 0.90$, $\Delta = 0.17$, $\theta = 47^\circ$, $\alpha = 124^\circ$, $S = 3.8$ E3

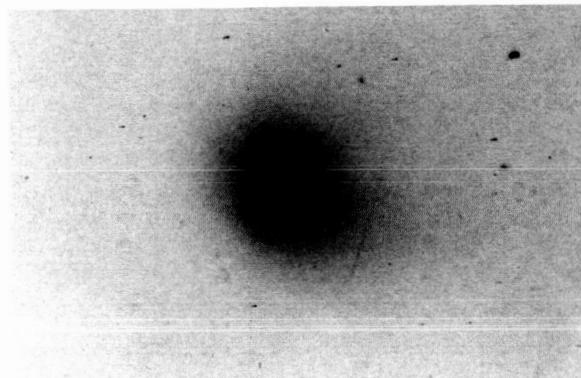


Figure 414-2. 1910 May 22.245; exposure 0.50 minute; $r = 0.90$, $\Delta = 0.17$, $\theta = 47^\circ$, $\alpha = 124^\circ$, $S = 3.8$ E3

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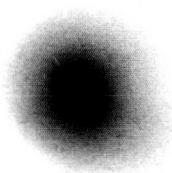


Figure 415-1. 1910 May 22.247; exposure 1 minute;
 $r = 0.90$, $\Delta = 0.17$, $\theta = 47^\circ$, $\alpha = 124^\circ$, S = 3.8 E3

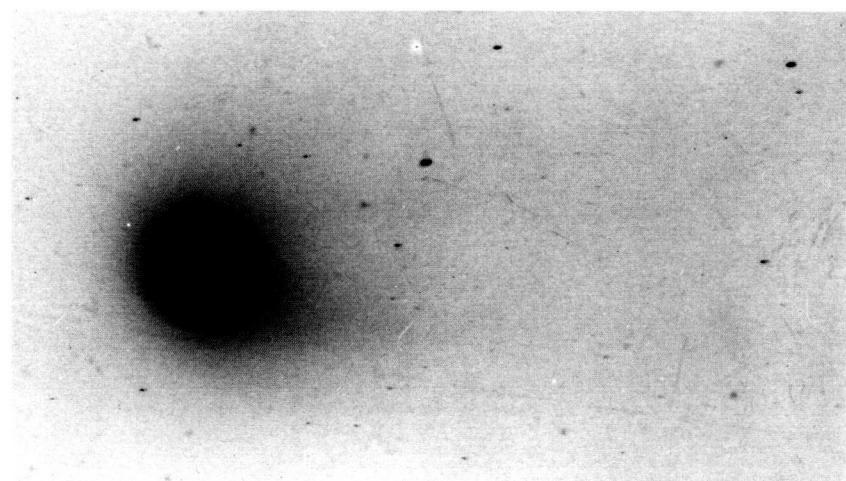


Figure 415-2. 1910 May 22.247; exposure 1 minute; $r = 0.90$, $\Delta = 0.17$,
 $\theta = 47^\circ$, $\alpha = 124^\circ$, S = 3.8 E3

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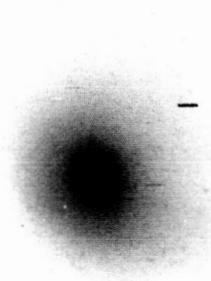


Figure 416-1. 1910 May 22.260; exposure 3 minutes; $r = 0.90$, $\Delta = 0.17$, $\theta = 47^\circ$, $\alpha = 124^\circ$, S = 3.8 E3

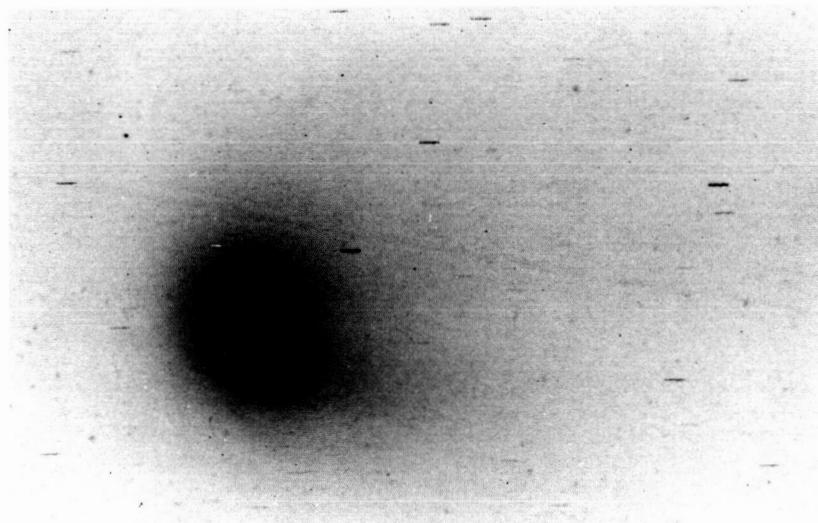


Figure 416-2. 1910 may 22.260; exposure 3 minutes; $r = 0.90$, $\Delta = 0.17$, $\theta = 47^\circ$, $\alpha = 124^\circ$, S = 3.8 E3

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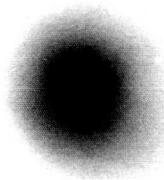


Figure 418-1. 1910 May 22.487; exposure 15 minutes; $r = 0.90$, $\Delta = 0.18$, $\theta = 49^\circ$, $\alpha = 121^\circ$, $S = 4.0$ E3

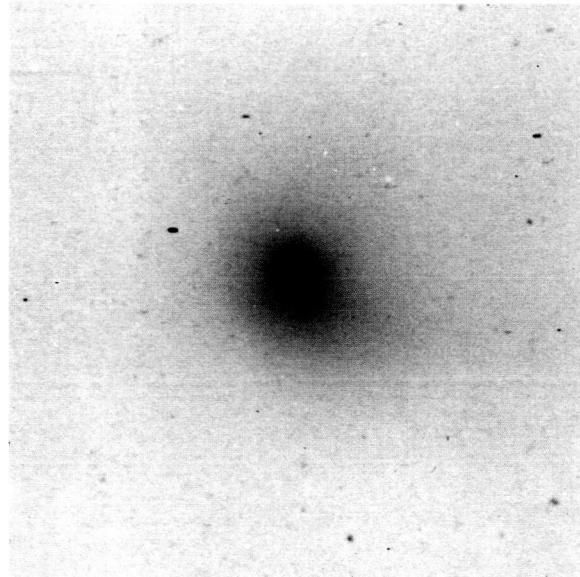


Figure 417. 1910 May 22.281; exposure 1 minute; $r = 0.90$, $\Delta = 0.17$, $\theta = 47^\circ$, $\alpha = 123^\circ$, $S = 3.9$ E3

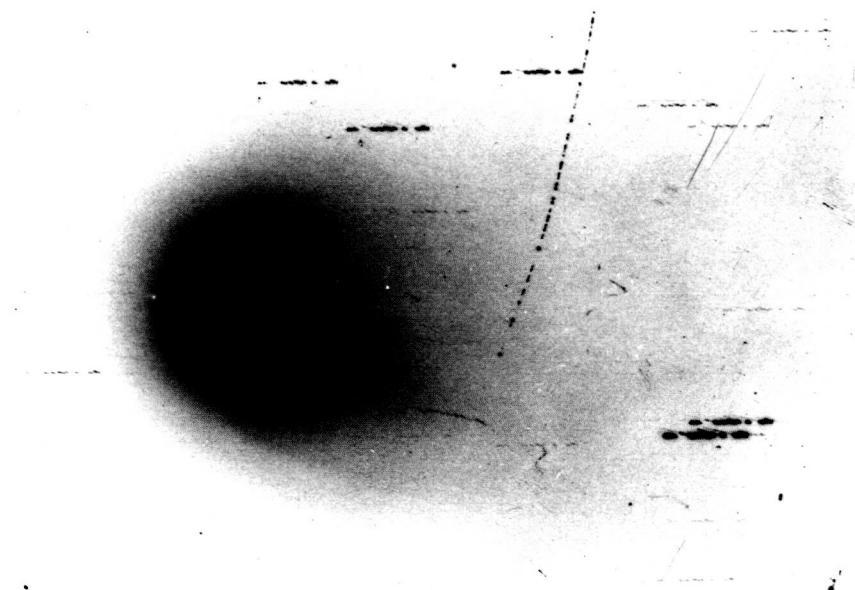


Figure 418-2. 1910 May 22.487; exposure 15 minutes; $r = 0.90$, $\Delta = 0.18$, $\theta = 49^\circ$, $\alpha = 121^\circ$, $S = 4.0$ E3

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Figure 419a. 1910 May 22.670; exposure 0.33 minute; $r = 0.90$, $\Delta = 0.18$, $\theta = 51^\circ$, $\alpha = 119^\circ$, $S = 2.5$ E3

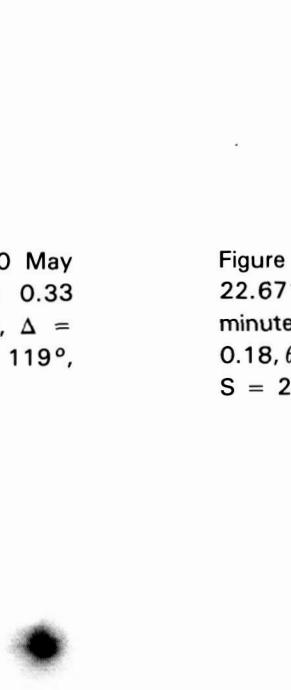


Figure 419b. 1910 May 22.671; exposure 0.66 minute; $r = 0.90$, $\Delta = 0.18$, $\theta = 51^\circ$, $\alpha = 119^\circ$, $S = 2.5$ E3

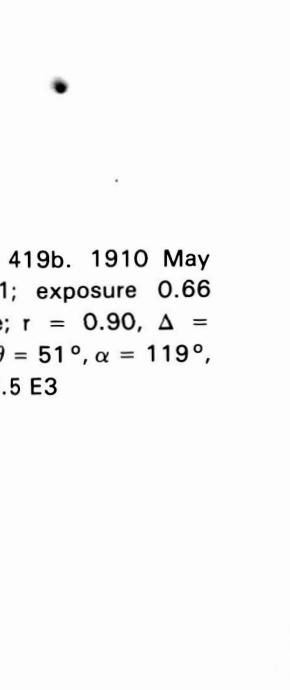


Figure 419c. 1910 May 22.672; exposure 1.30 minutes; $r = 0.90$, $\Delta = 0.18$, $\theta = 51^\circ$, $\alpha = 119^\circ$, $S = 2.5$ E3

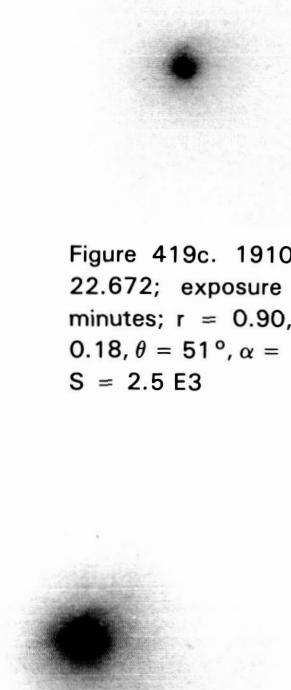


Figure 419d. 1910 May 22.673; exposure 2 minutes; $r = 0.90$, $\Delta = 0.18$, $\theta = 51^\circ$, $\alpha = 119^\circ$, $S = 2.5$ E3

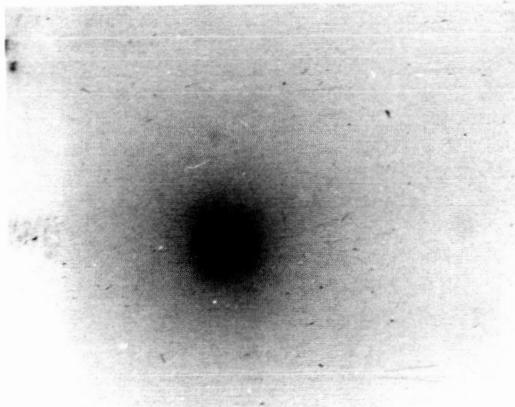


Figure 419e. 1910 May 22.675; exposure 5 minutes; $r = 0.90$, $\Delta = 0.18$, $\theta = 51^\circ$, $\alpha = 119^\circ$, $S = 2.5$ E3

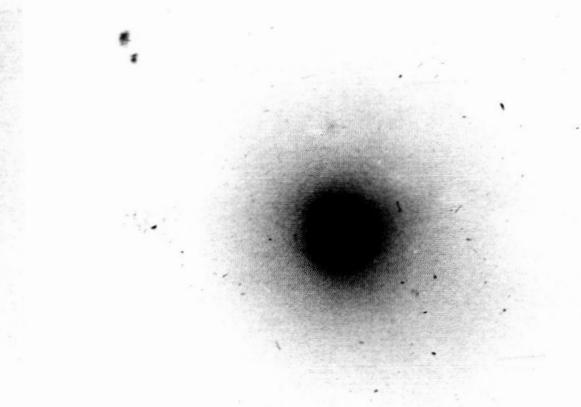


Figure 420-1. 1910 May 22.678; exposure 5 minutes; $r = 0.90$, $\Delta = 0.18$, $\theta = 51^\circ$, $\alpha = 119^\circ$, $S = 2.6$ E3

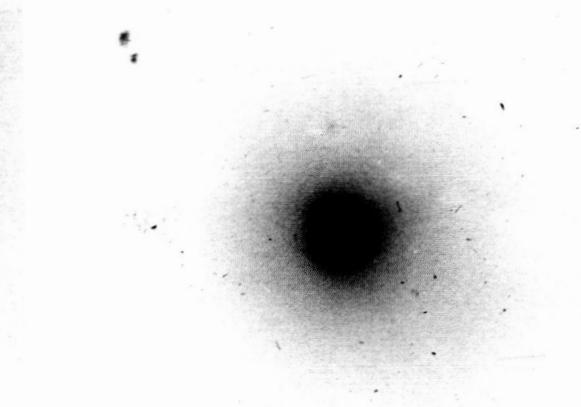


Figure 420-2. 1910 May 22.678; exposure 5 minutes; $r = 0.90$, $\Delta = 0.18$, $\theta = 51^\circ$, $\alpha = 119^\circ$, $S = 2.6$ E3

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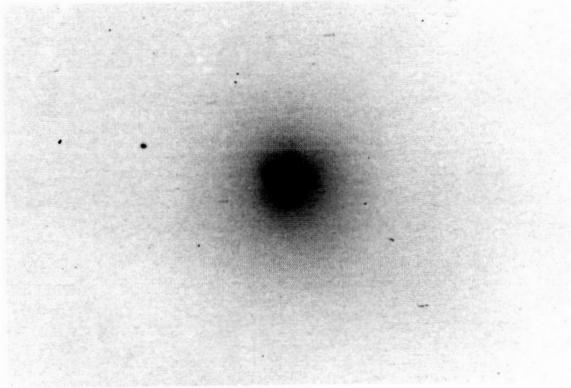


Figure 421. 1910 May 22.681; exposure 1 minute;
 $r = 0.90, \Delta = 0.18, \theta = 51^\circ, \alpha = 119^\circ, S = 2.6 E3$

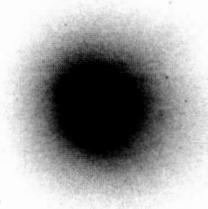


Figure 422. 1910 May 22.686; exposure 12
minutes; $r = 0.90, \Delta = 0.18, \theta = 51^\circ, \alpha = 118^\circ,$
 $S = 2.5 E3$

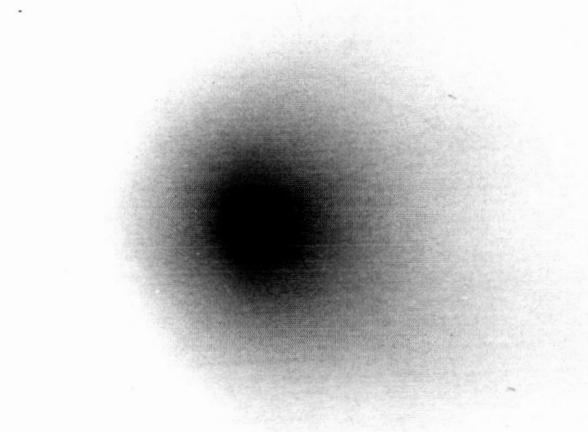


Figure 423-1. 1910 May 22.701; exposure 50 minutes
 $r = 0.90, \Delta = 0.18, \theta = 51^\circ, \alpha = 118^\circ, S = 2.6 E$

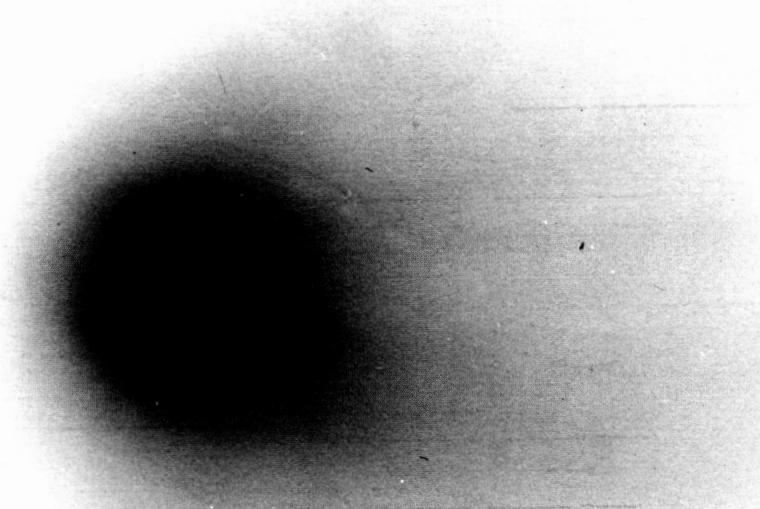


Figure 423-2. 1910 May 22.701; exposure 50 minutes; $r = 0.90,$
 $\Delta = 0.18, \theta = 51^\circ, \alpha = 118^\circ, S = 2.6 E3$

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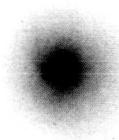


Figure 424. 1910 May 22.733; exposure 20 minutes; $r = 0.91$, $\Delta = 0.18$, $\theta = 52^\circ$, $\alpha = 118^\circ$, $S = 2.7$ E3

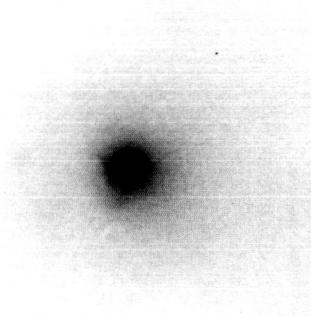


Figure 425-1. 1910 May 22.745; exposure 10 minutes; $r = 0.91$, $\Delta = 0.18$, $\theta = 52^\circ$, $\alpha = 118^\circ$, $S = 2.7$ E3

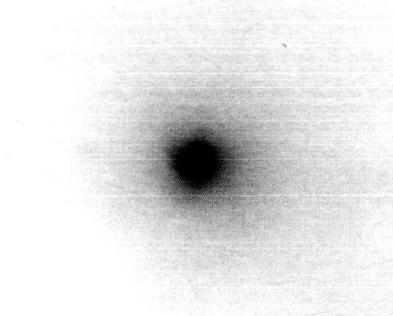


Figure 425-2. 1910 May 22.745; exposure 10 minutes; $r = 0.91$, $\Delta = 0.18$, $\theta = 52^\circ$, $\alpha = 118^\circ$, $S = 2.7$ E3



Figure 426. 1910 May 23.098; exposure 32 minutes; $r = 0.91$, $\Delta = 0.19$, $\theta = 55^\circ$, $\alpha = 114^\circ$, $S = 1.7$ E4

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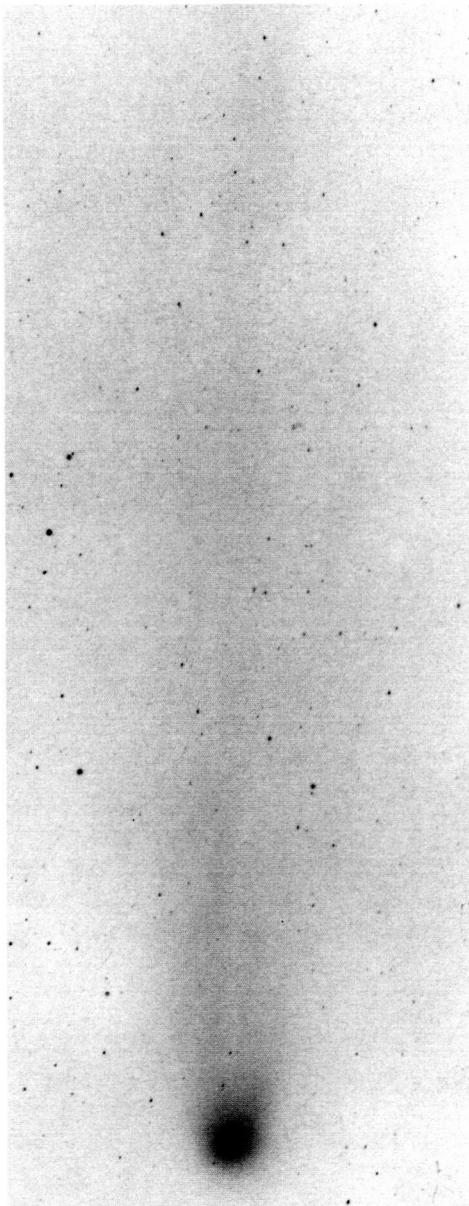


Figure 427. 1910 May 23.440; exposure 2 minutes; $r = 0.92$, $\Delta = 0.20$, $\theta = 58^\circ$, $\alpha = 111^\circ$, $S = 2.4 \text{ E}4$

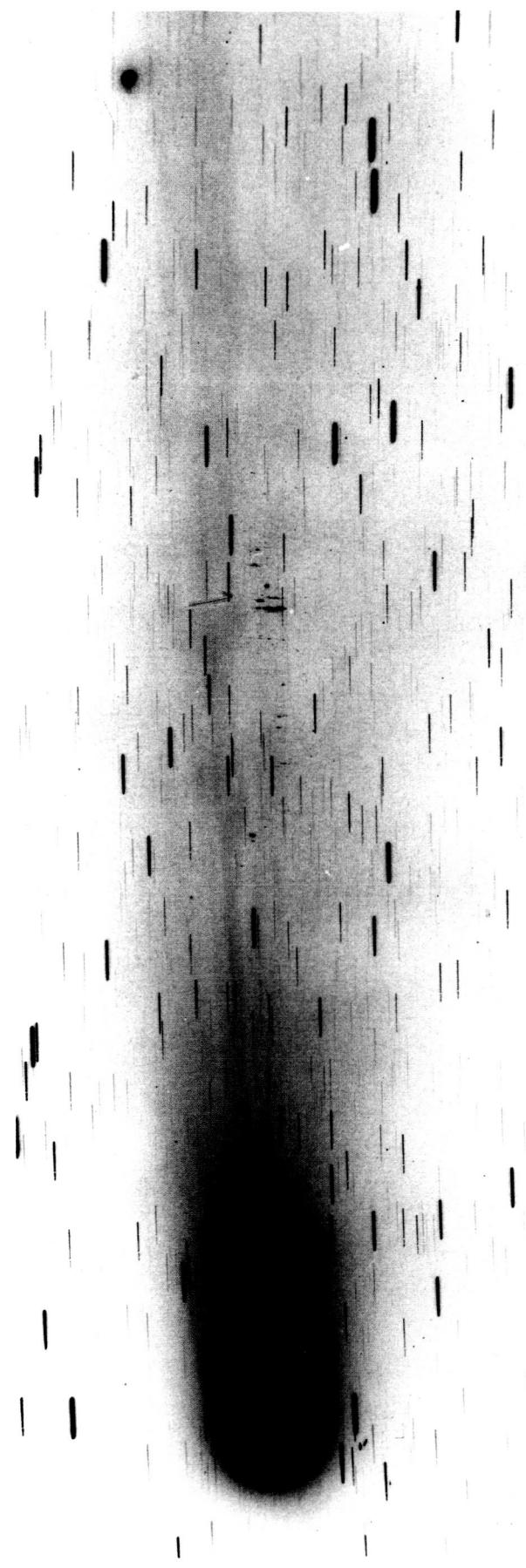


Figure 428. 1910 May 23.695; exposure 35 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 59^\circ$, $\alpha = 108^\circ$, $S = 1.8 \text{ E}4$

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Figure 429-1. 1910 May 23.726; exposure 60 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 60^\circ$, $\alpha = 108^\circ$, $S = 2.4 \text{ E}4$

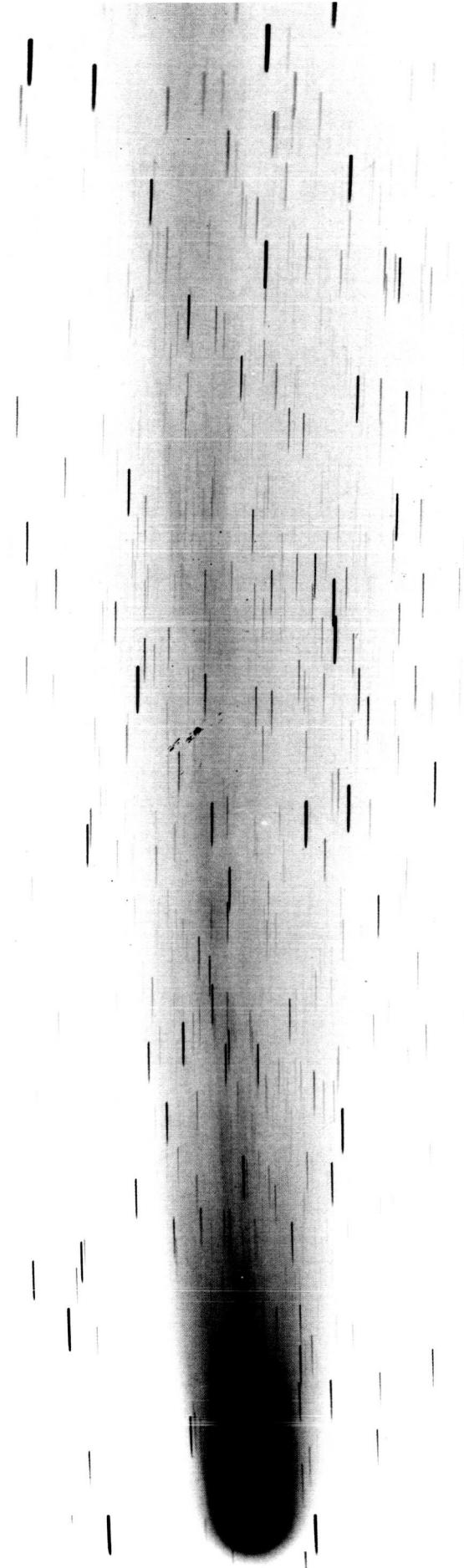


Figure 429-2. 1910 May 23.726; exposure 60 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 60^\circ$, $\alpha = 108^\circ$, $S = 2.4 \text{ E}4$

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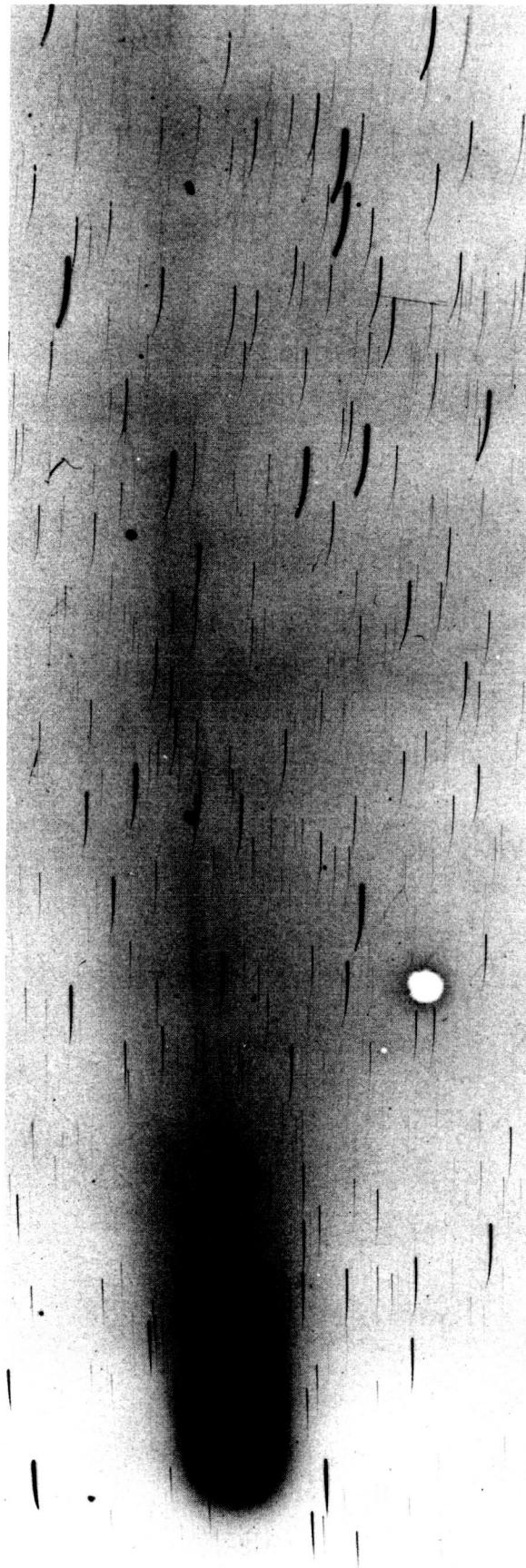


Figure 430. 1910 May 23.727; exposure 53 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 60^\circ$, $\alpha = 108^\circ$, $S = 1.8 \text{ E}4$

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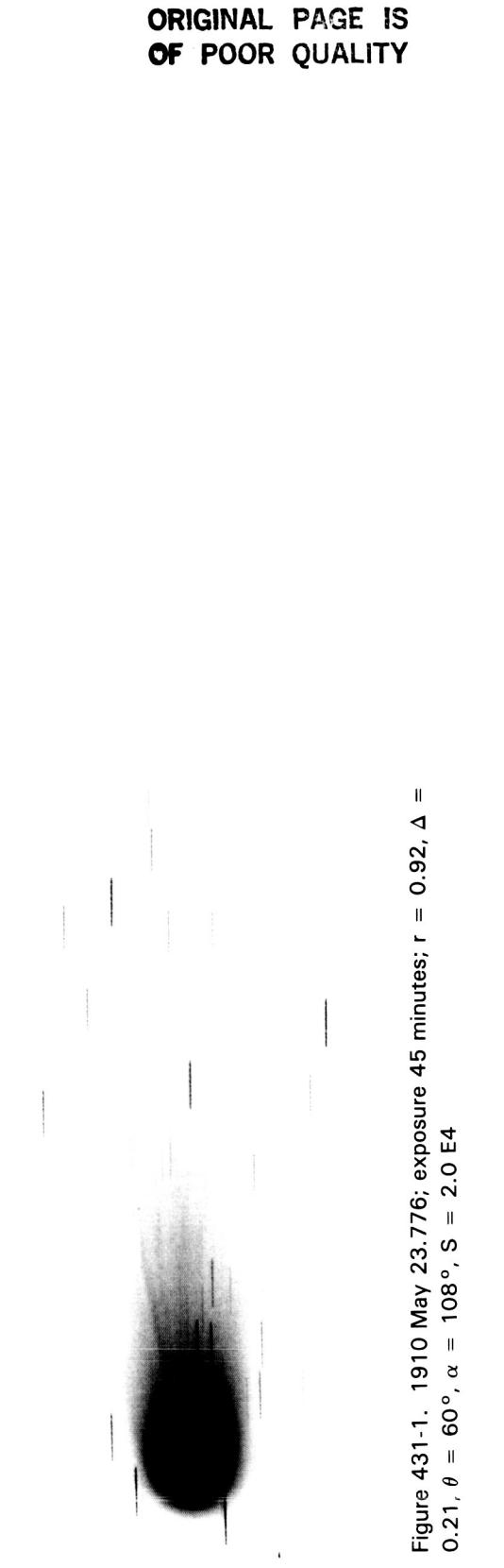


Figure 431-1. 1910 May 23.776; exposure 45 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 60^\circ$, $\alpha = 108^\circ$, $S = 2.0$ E4

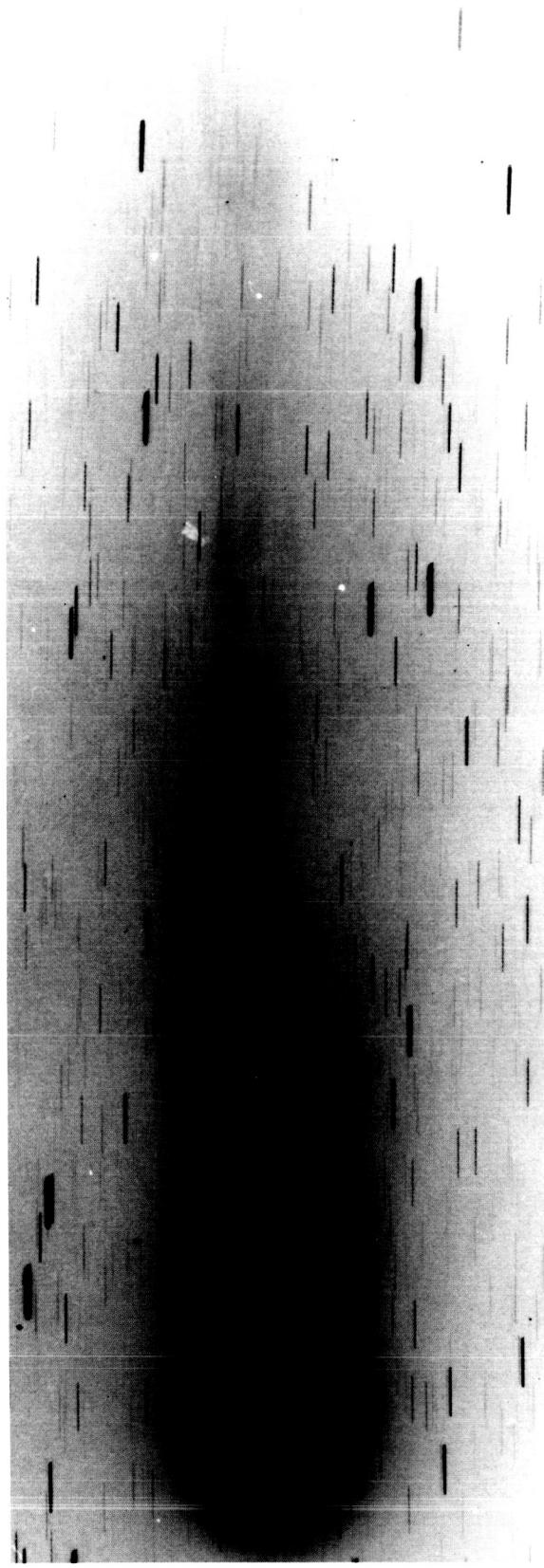


Figure 431-2. 1910 May 23.776; exposure 45 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 60^\circ$, $\alpha = 108^\circ$, $S = 2.0$ E4

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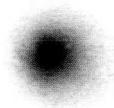


Figure 432-1. 1910 May 23.264; exposure 0.75 minute; $r = 0.91$, $\Delta = 0.20$, $\theta = 56^\circ$, $\alpha = 112^\circ$, $S = 4.4$ E3



Figure 433-1. 1910 May 23.270; exposure 2.50 minutes; $r = 0.91$, $\Delta = 0.20$, $\theta = 56^\circ$, $\alpha = 112^\circ$, $S = 4.4$ E3



Figure 432-2. 1910 May 23.264; exposure 0.75 minute; $r = 0.91$, $\Delta = 0.20$, $\theta = 56^\circ$, $\alpha = 112^\circ$, $S = 4.4$ E3

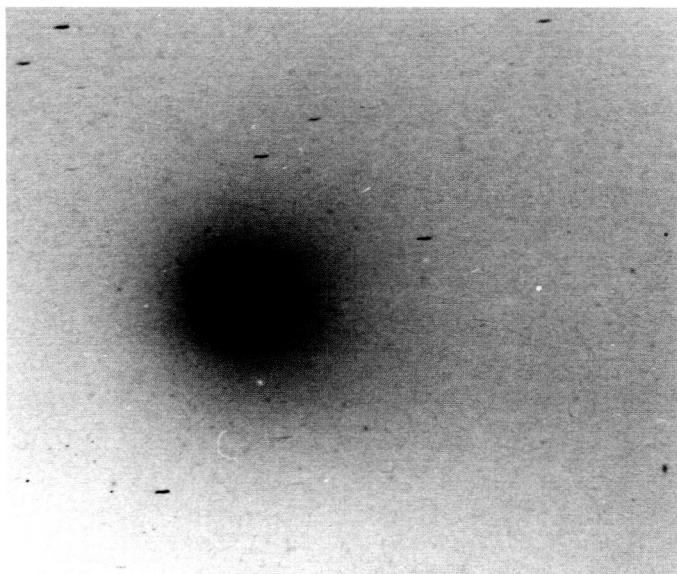


Figure 433-2. 1910 May 23.270; exposure 2.50 minutes; $r = 0.91$, $\Delta = 0.20$, $\theta = 56^\circ$, $\alpha = 112^\circ$, $S = 4.4$ E3

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Figure 434-1. 1910 May 23.276; exposure 3 minutes; $r = 0.91$, $\Delta = 0.20$, $\theta = 56^\circ$, $\alpha = 112^\circ$, $S = 4.4$ E3

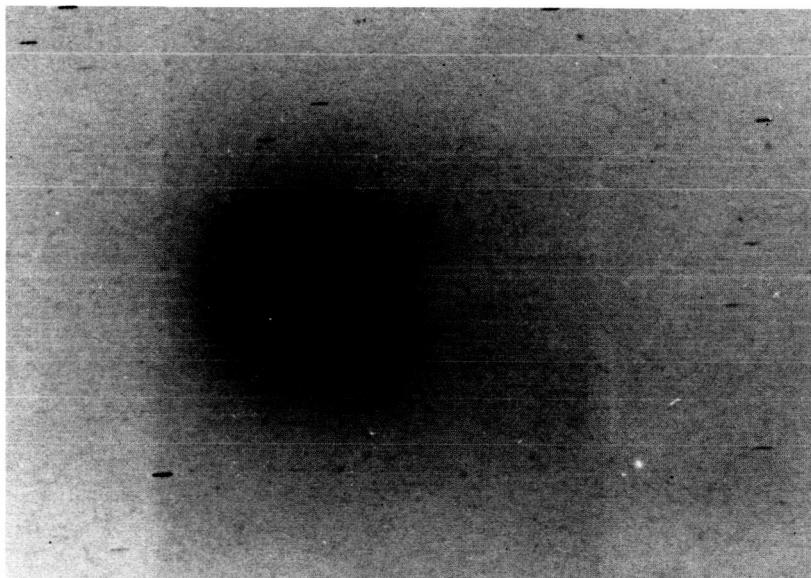


Figure 434-2. 1910 May 23.276; exposure 3 minutes; $r = 0.91$, $\Delta = 0.20$, $\theta = 56^\circ$, $\alpha = 112^\circ$, $S = 4.4$ E3

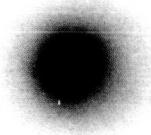


Figure 435-1a. 1910 May 23.442; exposure 2 minutes; $r = 0.92$, $\Delta = 0.20$, $\theta = 58^\circ$, $\alpha = 111^\circ$, $S = 4.5$ E3

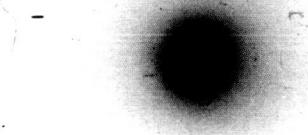


Figure 435-1b. 1910 May 23.442; exposure 2 minutes; $r = 0.92$, $\Delta = 0.20$, $\theta = 58^\circ$, $\alpha = 111^\circ$, $S = 4.5$ E3

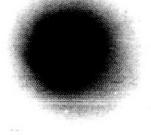


Figure 435-2a. 1910 May 23.444; exposure 2 minutes; $r = 0.92$, $\Delta = 0.20$, $\theta = 58^\circ$, $\alpha = 111^\circ$, $S = 4.5$ E3

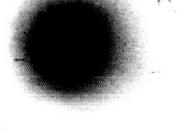


Figure 435-2b. 1910 May 23.444; exposure 2 minutes; $r = 0.92$, $\Delta = 0.20$, $\theta = 58^\circ$, $\alpha = 111^\circ$, $S = 4.5$ E3

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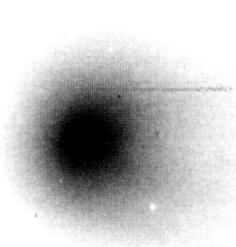


Figure 436. 1910 May 23.474; exposure 30 minutes; $r = 0.92$, $\Delta = 0.20$, $\theta = 58^\circ$, $\alpha = 110^\circ$, $S = 4.5$ E3

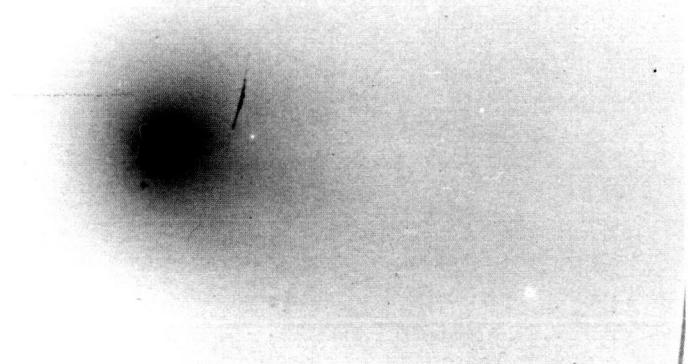


Figure 437. 1910 May 23.505; exposure 52 minutes; $r = 0.92$, $\Delta = 0.20$, $\theta = 58^\circ$, $\alpha = 110^\circ$, $S = 4.5$ E3

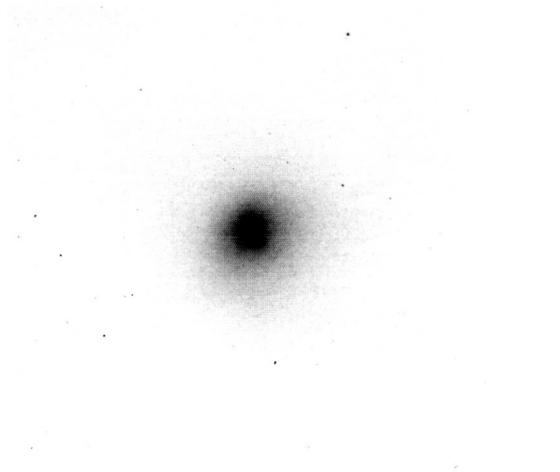


Figure 438-1. 1910 May 23.678; exposure 0.50 minute; $r = 0.92$, $\Delta = 0.21$, $\theta = 59^\circ$, $\alpha = 108^\circ$, $S = 3.0$ E3

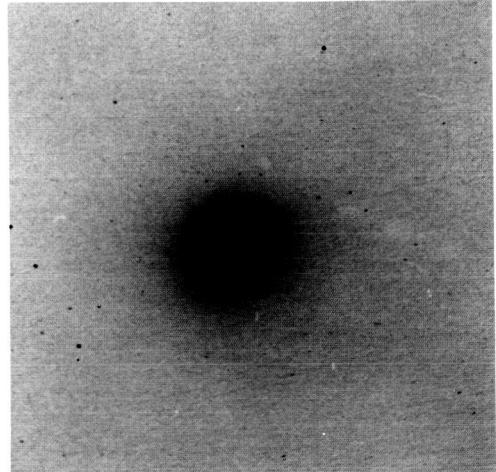


Figure 438-2. 1910 May 23.678; exposure 0.50 minute; $R = 0.92$, $\Delta = 0.21$, $\theta = 59^\circ$, $\alpha = 108^\circ$, $S = 3.0$ E3

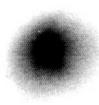


Figure 439. 1910 May 23.680; exposure 1 minute; $r = 0.92$, $\Delta = 0.21$, $\theta = 59^\circ$, $\alpha = 108^\circ$, $S = 3.0$ E3

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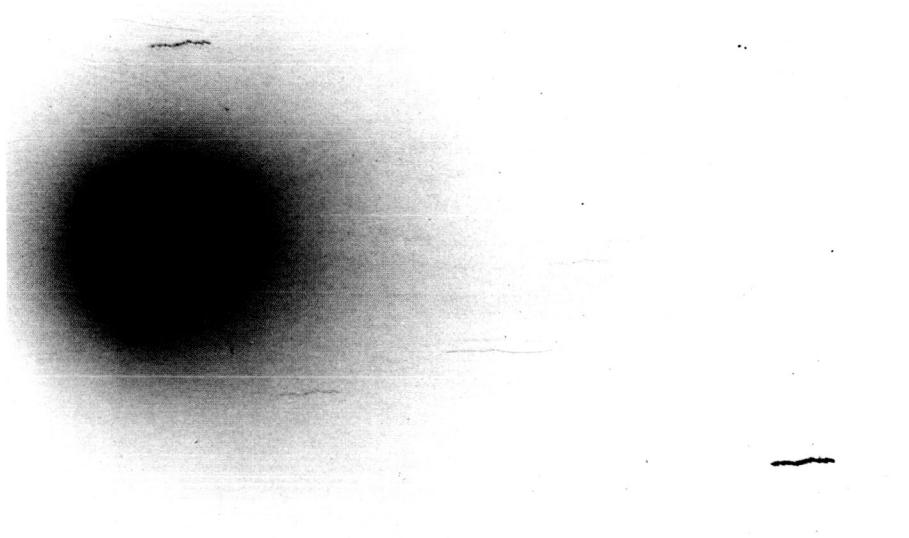


Figure 440-1. 1910 May 23.684; exposure 8 minutes; $r = 0.92$, $\Delta = 0.21$,
 $\theta = 59^\circ$, $\alpha = 108^\circ$, S = 3.0 E3

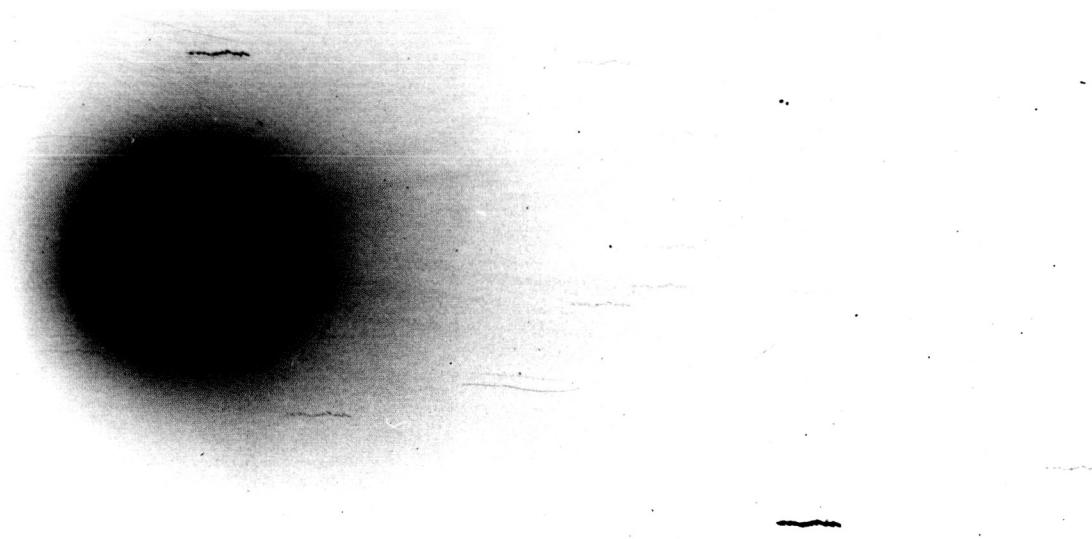


Figure 440-2. 1910 May 23.684; exposure 8 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 59^\circ$, $\alpha = 108^\circ$,
S = 3.0 E3

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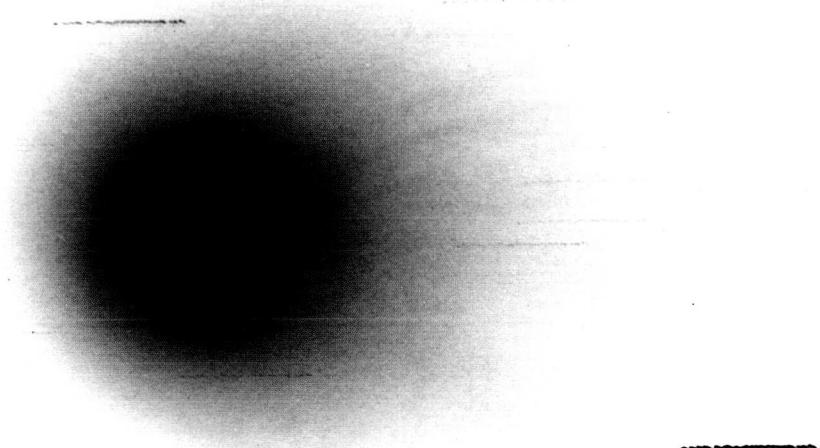


Figure 441-1. 1910 May 23.694; exposure 18 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 59^\circ$, $\alpha = 108^\circ$, S = 3.0 E3

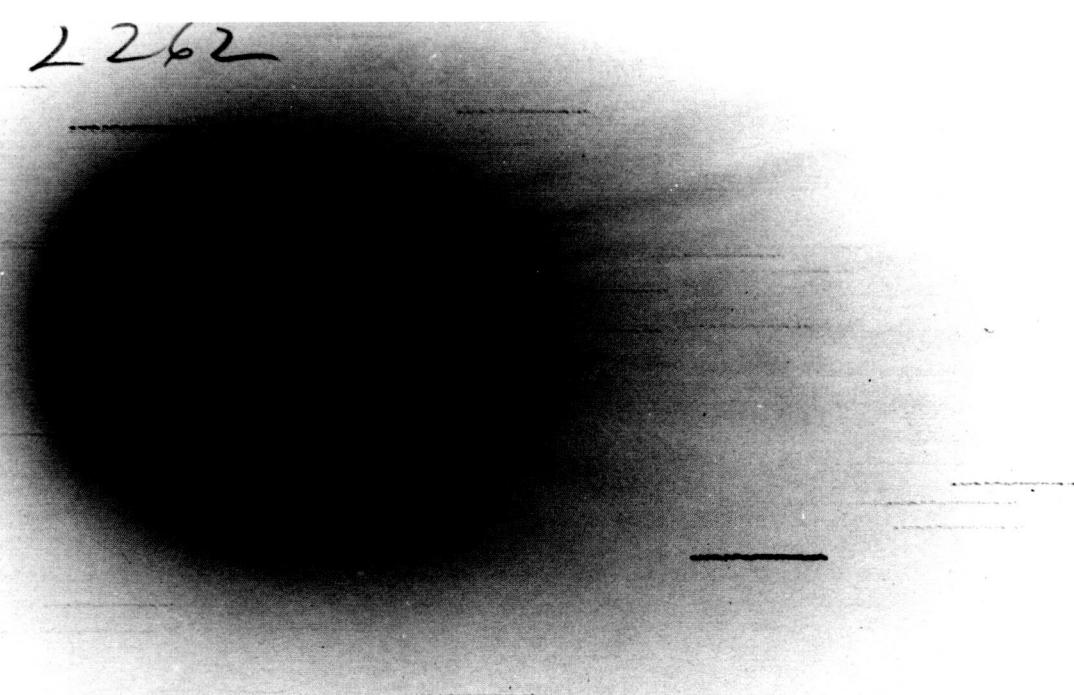


Figure 441-2. 1910 May 23.694; exposure 18 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 59^\circ$, $\alpha = 108^\circ$, S = 3.0 E3

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Figure 442-1. 1910 May 23.726; exposure 60 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 60^\circ$, $\alpha = 108^\circ$, $S = 3.0$ E3



Figure 442-2. 1910 May 23.726; exposure 60 minutes; $r = 0.92$, $\Delta = 0.21$, $\theta = 60^\circ$, $\alpha = 108^\circ$, $S = 3.0$ E3

Figure 442-3. 1910 May 23.760; exposure 0.17 minute; $r = 0.92$, $\Delta = 0.21$, $\theta = 60^\circ$, $\alpha = 108^\circ$, $S = 3.0$ E3

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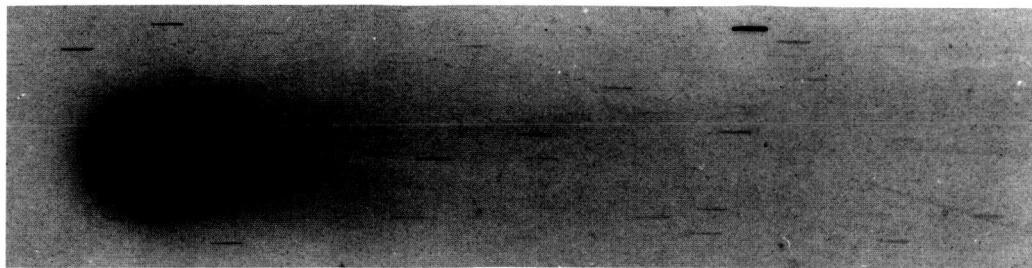


Figure 445. 1910 May 24.138; exposure 21 minutes; $r = 0.93$, $\Delta = 0.22$, $\theta = 62^\circ$, $\alpha = 104^\circ$, $S = 2.0$ E4



Figure 446. 1910 May 24.454; exposure 2 minutes; $r = 0.93$, $\Delta = 0.23$, $\theta = 64^\circ$, $\alpha = 102^\circ$, $S = 2.8$ E4



Figure 447. 1910 May 24.461; exposure 10 minutes; $r = 0.93$, $\Delta = 0.23$, $\theta = 64^\circ$, $\alpha = 102^\circ$, $S = 2.8$ E4

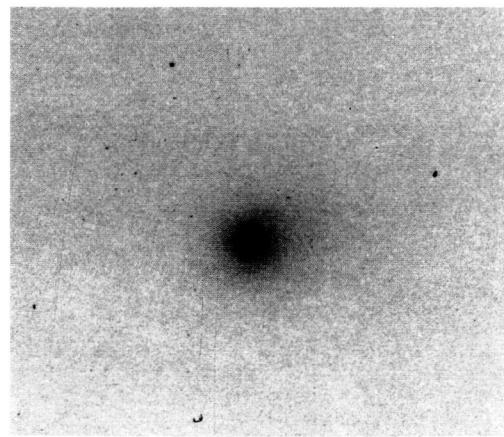


Figure 448. 1910 May 24.570; exposure 10 minutes; $r = 0.93$, $\Delta = 0.23$, $\theta = 65^\circ$, $\alpha = 101^\circ$, $S = 1.4$ E4

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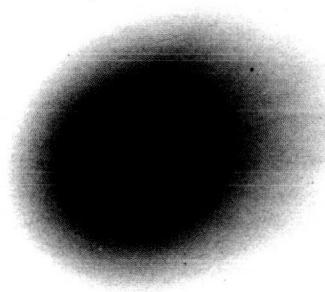


Figure 449-1. 1910 May 24.446; exposure 30 minutes;
 $r = 0.93, \Delta = 0.23, \theta = 64^\circ, \alpha = 102^\circ, S = 5.1 \text{ E}3$



Figure 449-2. 1910 May 24.446; exposure 30 minutes; $r = 0.93, \Delta = 0.23, \theta = 64^\circ, \alpha = 102^\circ, S = 5.1 \text{ E}3$

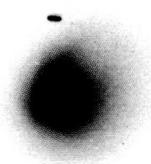


Figure 450a. 1910 May 24.501; exposure
2 minutes; $r = 0.93, \Delta = 0.23, \theta = 64^\circ,$
 $\alpha = 102^\circ, S = 5.2 \text{ E}3$

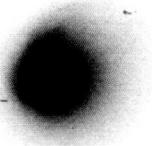


Figure 450b. 1910 May 24.461; exposure
3 minutes; $r = 0.93, \Delta = 0.23, \theta = 64^\circ,$
 $\alpha = 102^\circ, S = 5.1 \text{ E}3$

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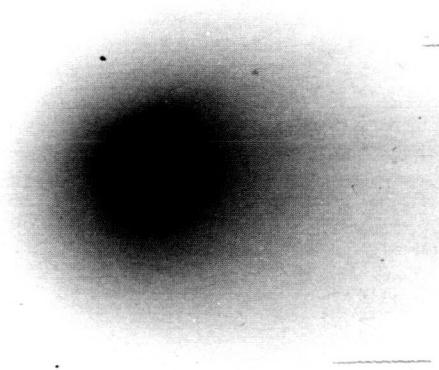


Figure 451-1. 1910 May 24.489; exposure 30 minutes;
 $r = 0.93$, $\Delta = 0.23$, $\theta = 64^\circ$, $\alpha = 102^\circ$, S = 5.2 E3

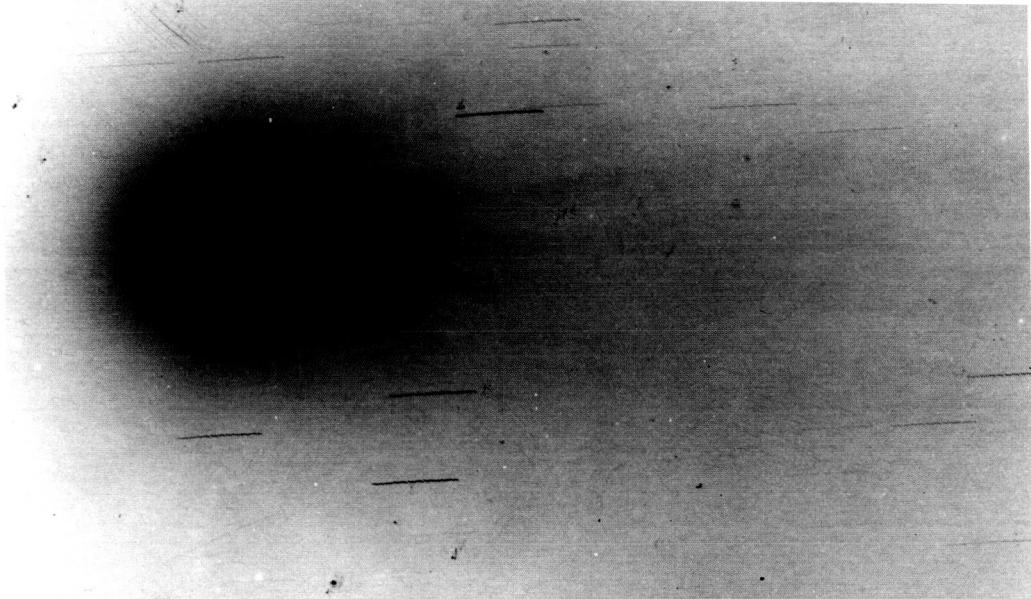


Figure 451-2. 1910 May 24.489; exposure 30 minutes; $r = 0.93$, $\Delta = 0.23$, $\theta = 64^\circ$,
 $\alpha = 102^\circ$, S = 5.2 E3

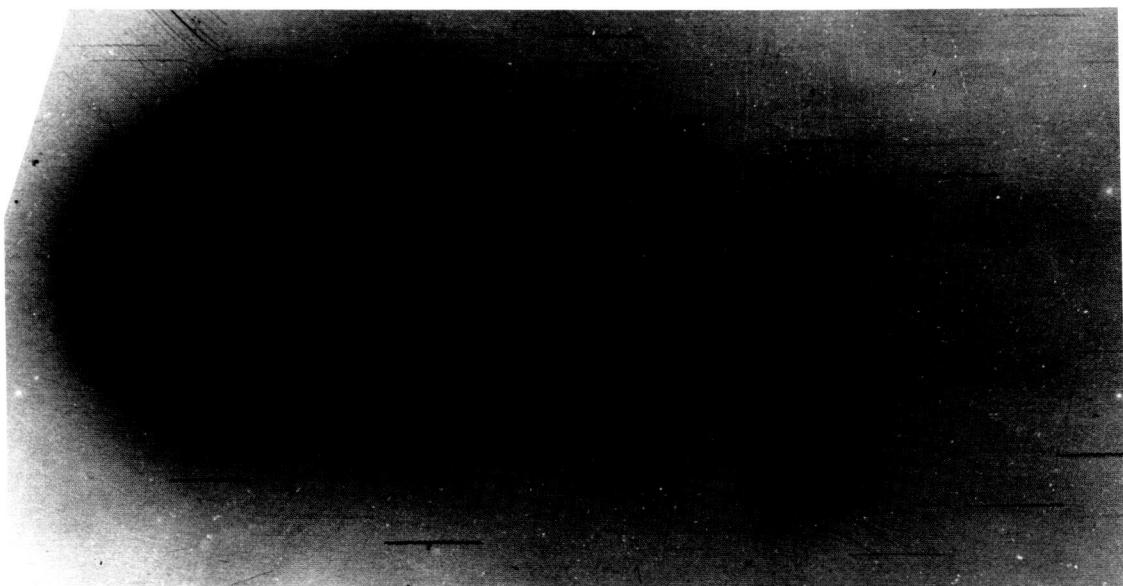


Figure 451-3. 1910 May 24.489; exposure 30 minutes; $r = 0.93$, $\Delta = 0.23$, $\theta = 64^\circ$, $\alpha = 102^\circ$,
S = 5.2 E3

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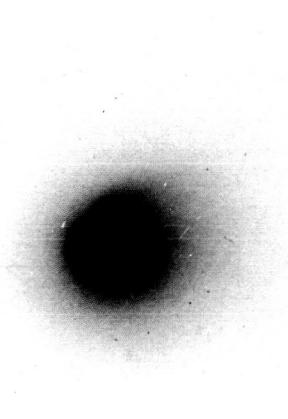


Figure 452. 1910 May 24.504; exposure 5 minutes;
 $r = 0.93$, $\Delta = 0.23$, $\theta = 64^\circ$, $\alpha = 102^\circ$, S = 5.2 E3

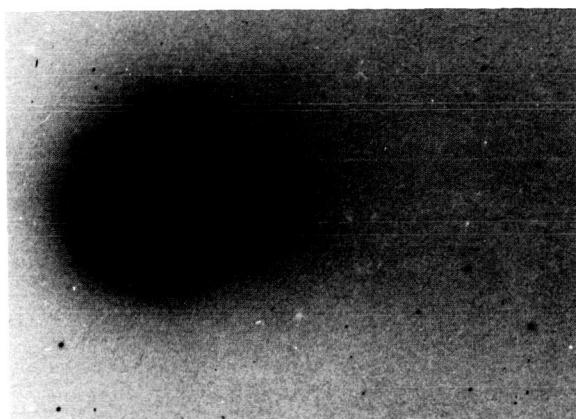


Figure 453. 1910 May 24.562; exposure 10 minutes;
 $r = 0.93$, $\Delta = 0.23$, $\theta = 65^\circ$, $\alpha = 101^\circ$,
S = 8.5 E3



Figure 454a. 1910 May 24.648; ex-
posure 0.33 minute; $r = 0.93$, $\Delta =$
0.24, $\theta = 65^\circ$, $\alpha = 101^\circ$, S = 3.2 E3

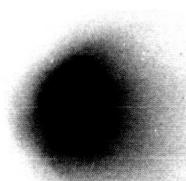


Figure 454c. 1910 May 24.651; ex-
posure 3 minutes; $r = 0.93$, $\Delta = 0.24$,
 $\theta = 65^\circ$, $\alpha = 101^\circ$, S = 3.2 E3



Figure 454b. 1910 May 24.649; ex-
posure 1 minute; $r = 0.93$, $\Delta = 0.24$,
 $\theta = 65^\circ$, $\alpha = 101^\circ$, S = 3.2 E3

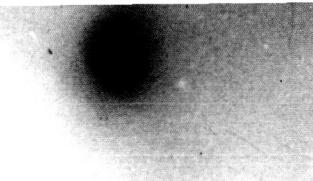


Figure 454d. 1910 May 24.654;
exposure 2 minutes; $r = 0.93$, $\Delta =$
0.24, $\theta = 65^\circ$, $\alpha = 101^\circ$, S = 3.2
E3

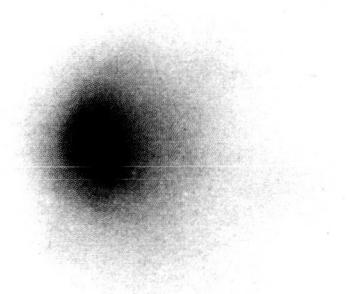


Figure 455. 1910 May 24.667; exposure 15
minutes; $r = 0.93$, $\Delta = 0.24$, $\theta = 65^\circ$, $\alpha = 100^\circ$,
S = 3.3 E3

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Figure 456 has been deleted intentionally.



Figure 457. 1910 May 25.117; exposure 20 minutes; $r = 0.94$, $\Delta = 0.25$,
 $\theta = 67^\circ$, $\alpha = 97^\circ$, $S = 2.2 \text{ E}4$

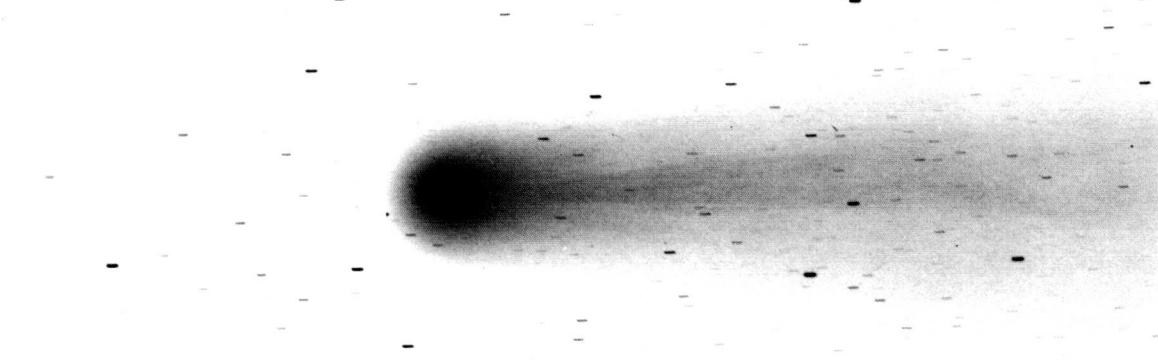


Figure 458-1. 1910 May 25.443; exposure 18 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 3.1 \text{ E}4$



Figure 458-2. 1910 May 25.443; exposure 18 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 3.1 \text{ E}4$

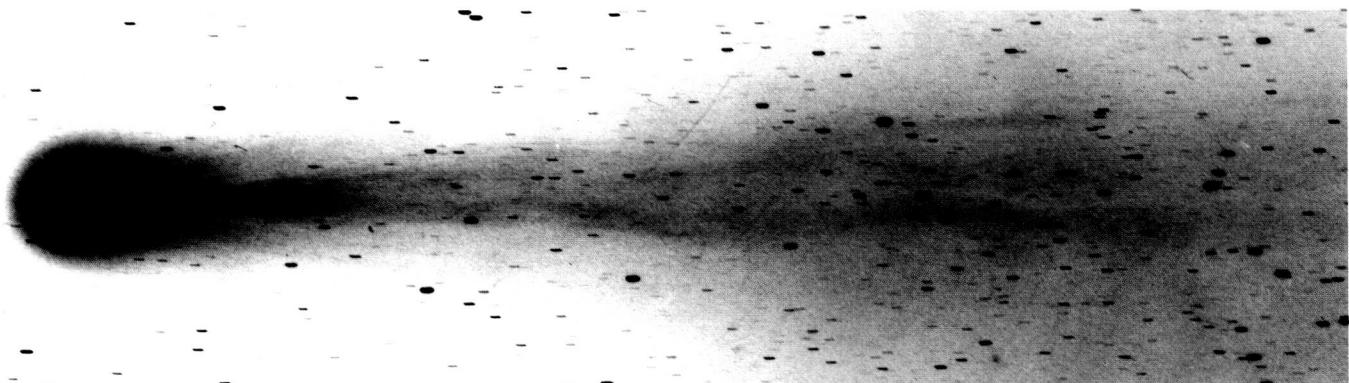


Figure 458-3. 1910 May 25.443; exposure 18 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 690$, $\alpha = 95^\circ$, $S = 3.1 \text{ E}4$

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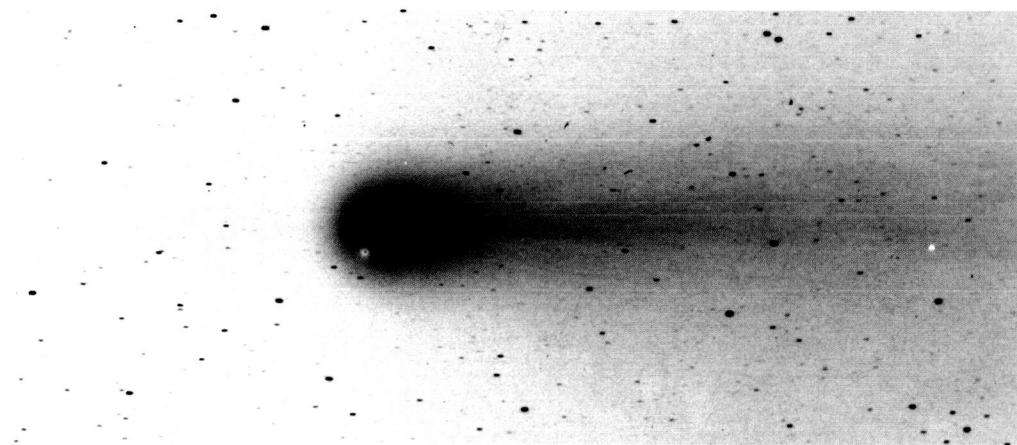


Figure 459-1. 1910 May 25.456; exposure 8 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 3.1$ E4

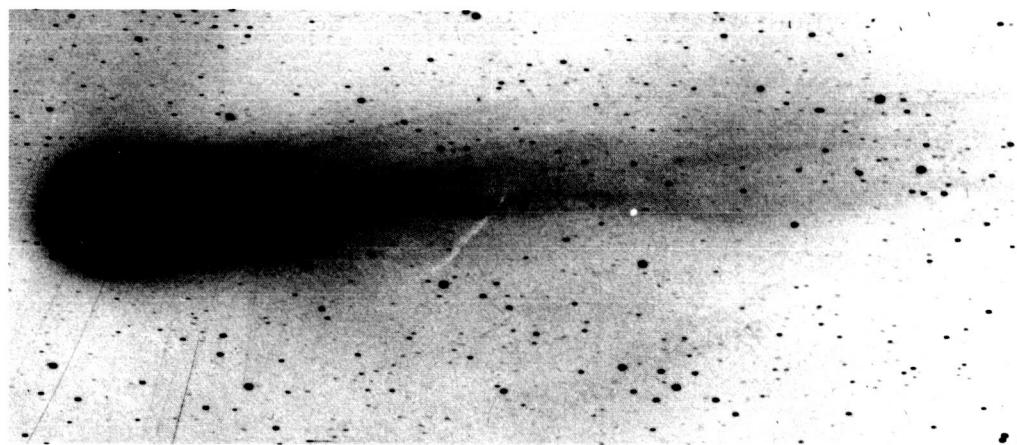


Figure 459-2. 1910 May 25.456; exposure 8 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 3.1$ E4

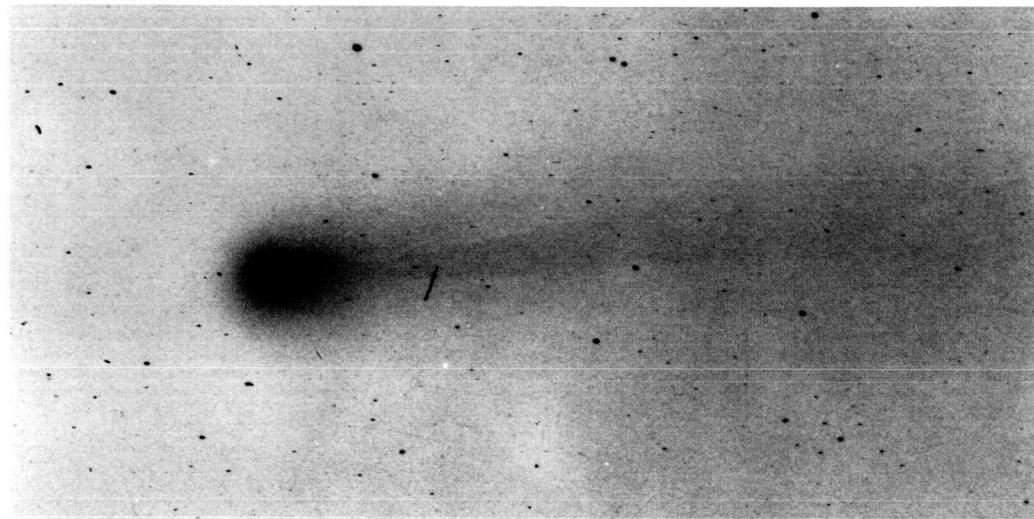


Figure 460. 1910 May 25.492; exposure 5 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 3.1$ E4

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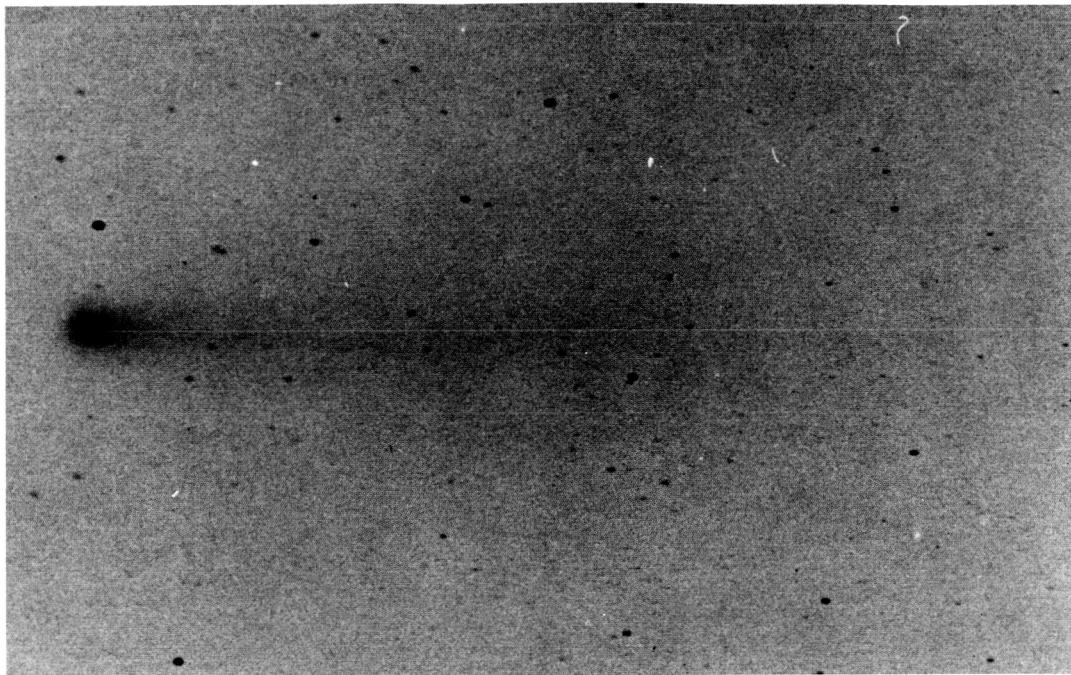


Figure 461. 1910 May 25.610; exposure 22 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$,
 $S = 6.8$ E4

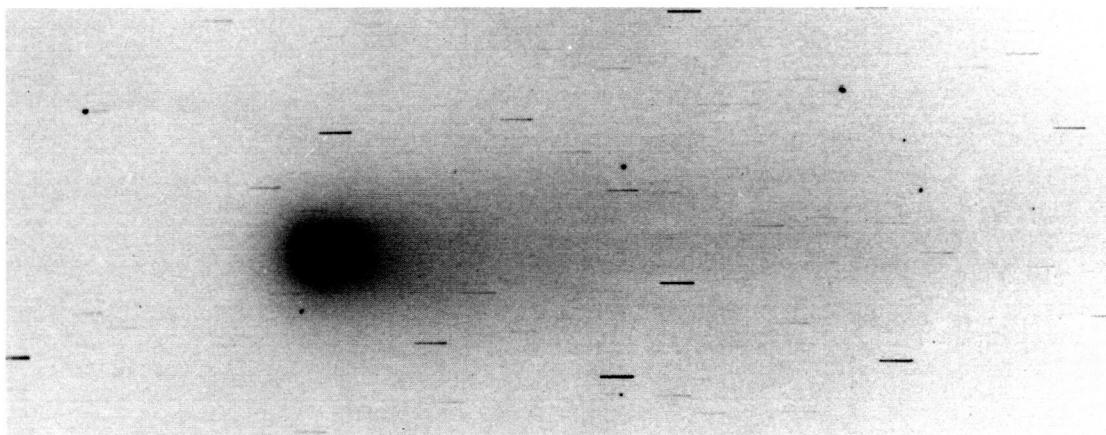


Figure 462. 1910 May 25.619; exposure 45 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$,
 $S = 2.4$ E4

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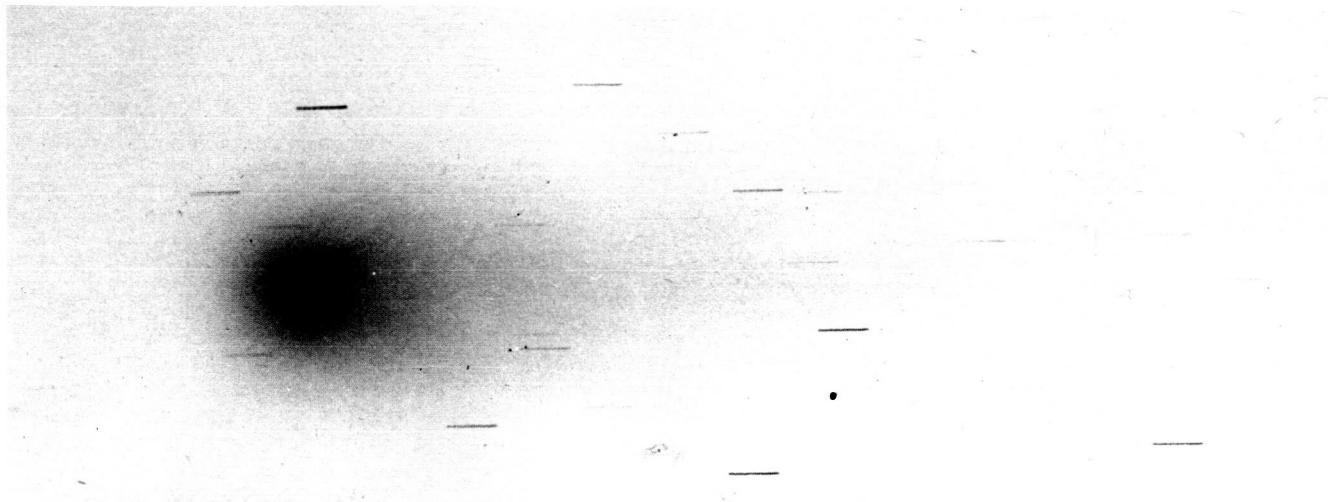


Figure 463-1. 1910 May 25.619; exposure 45 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 1.6 \text{ E}4$

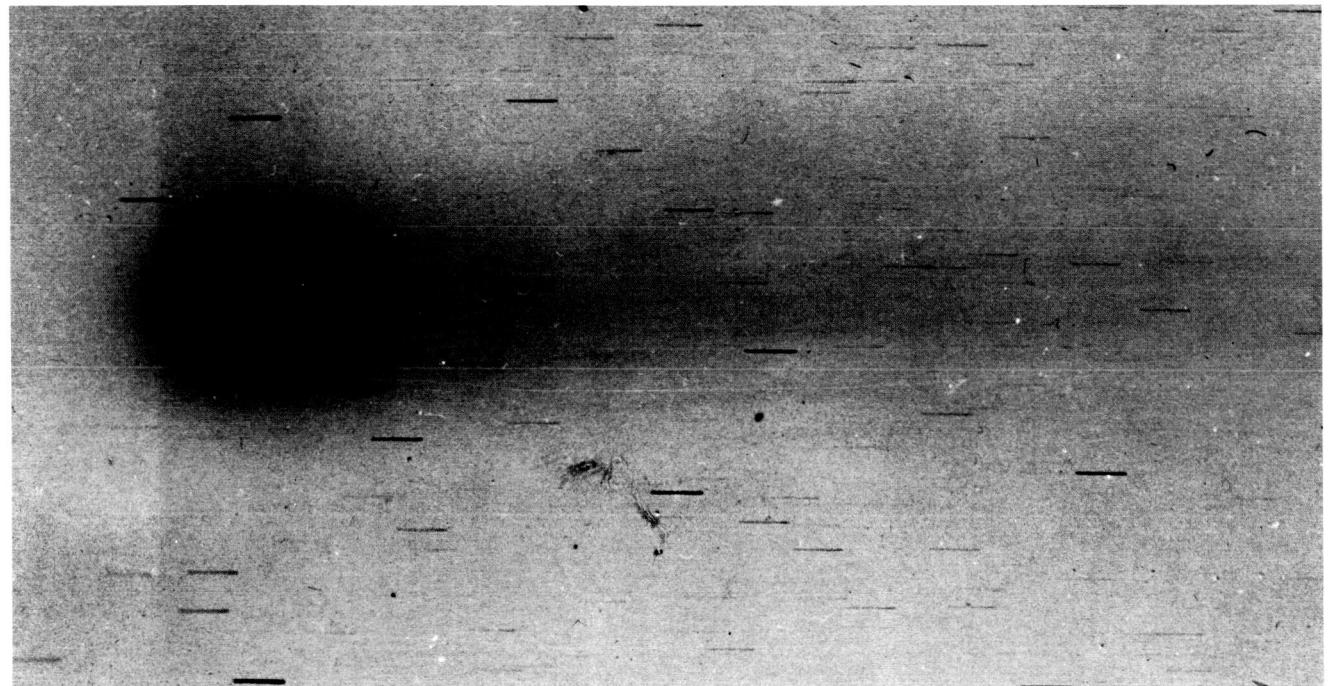


Figure 463-2. 1910 May 25.619; exposure 45 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 1.6 \text{ E}4$

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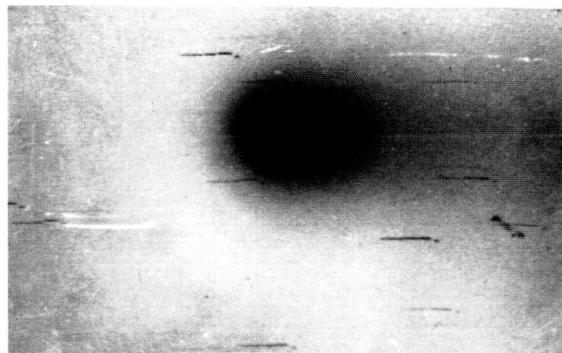


Figure 464. 1910 May 25.625; exposure 60 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 2.0 \text{ E}4$



Figure 465-1. 1910 May 25.653; exposure 41 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 2.6 \text{ E}4$

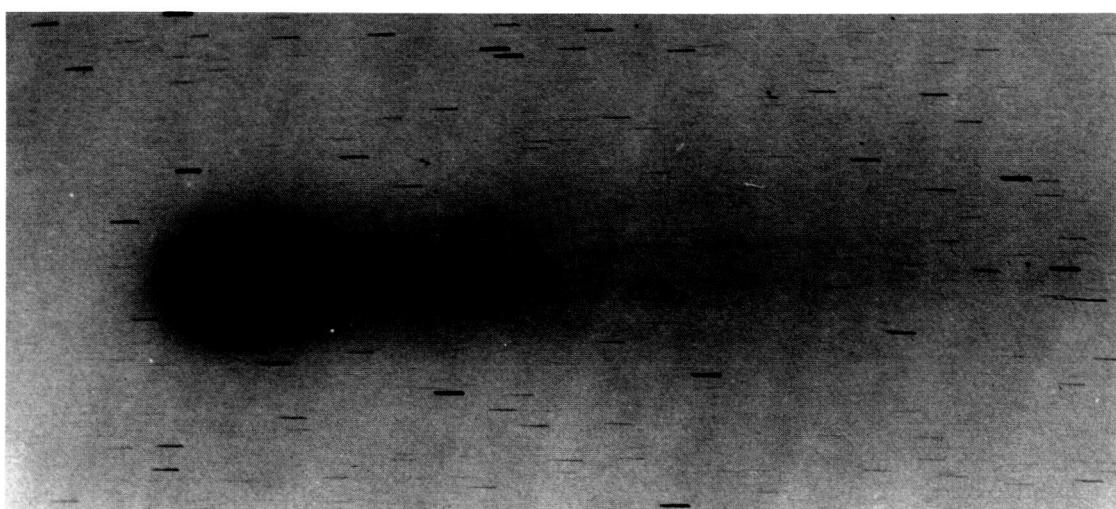


Figure 465-2. 1910 May 25.653; exposure 41 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 2.6 \text{ E}4$

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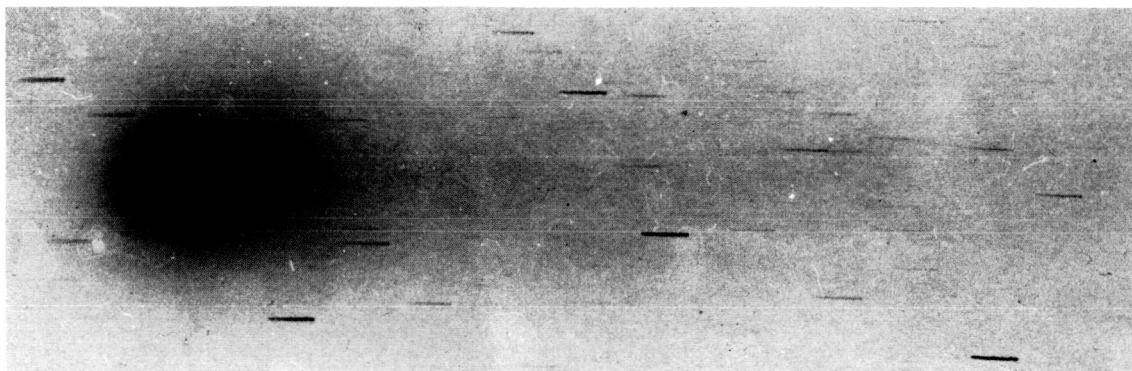


Figure 466-1. 1910 May 25.653; exposure 41 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$,
 $S = 1.6 \text{ E}4$



Figure 466-2. 1910 May 25.653; exposure 41 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$,
 $S = 1.6 \text{ E}4$

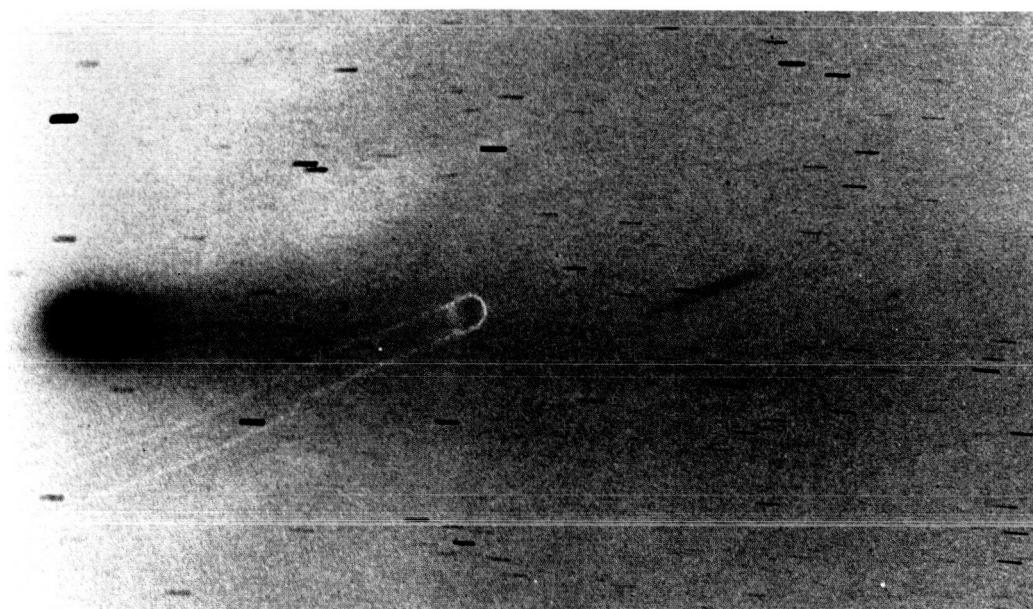


Figure 467. 1910 May 25.655; exposure 47 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 3.4 \text{ E}4$

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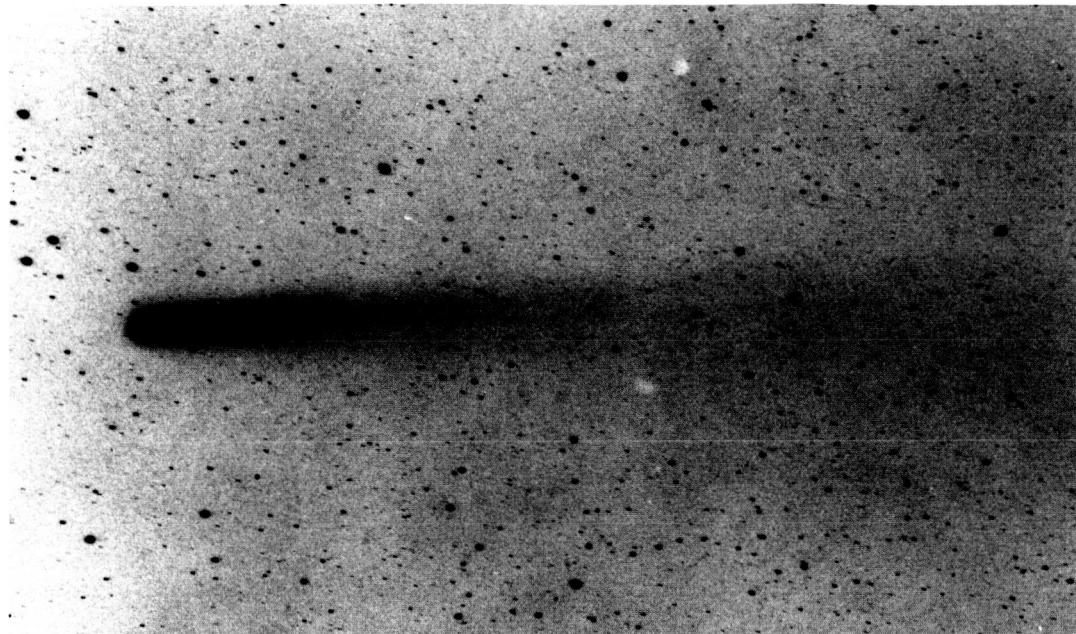


Figure 468. 1910 May 25.660; exposure 11 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$,
 $S = 1.2 \text{ E}5$

Figure 469. 1910 May 25.666; exposure 11
minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$,
 $S = 7.8 \text{ E}4$

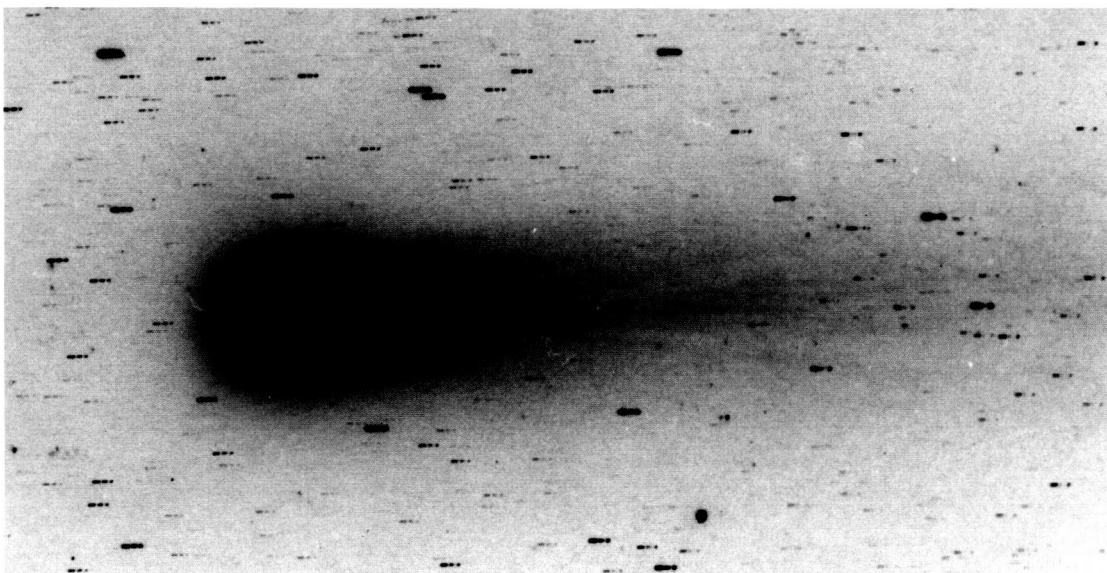


Figure 471. 1910 May 25.788; exposure 23 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 93^\circ$,
 $S = 2.6 \text{ E}4$

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Figure 470-1. 1910 May 25.706; exposure 30 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, S = 2.6 E4

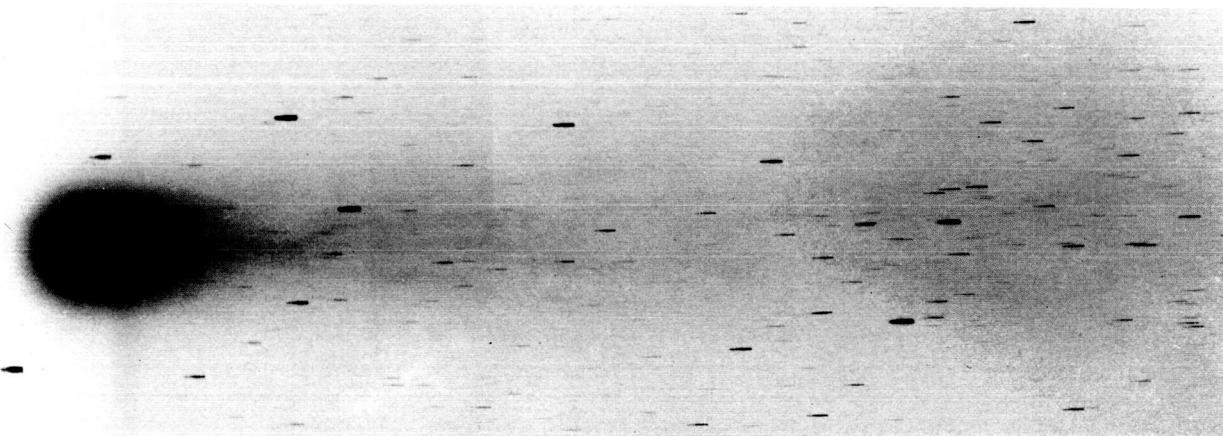


Figure 470-2. 1910 May 25.706; exposure 30 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, S = 2.6 E4

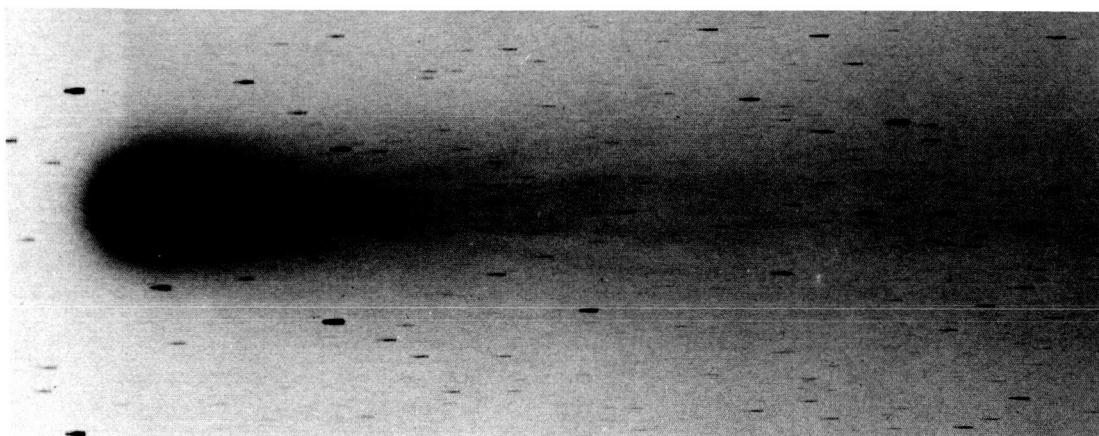


Figure 470-3. 1910 May 25.706; exposure 30 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, S = 2.64 E4

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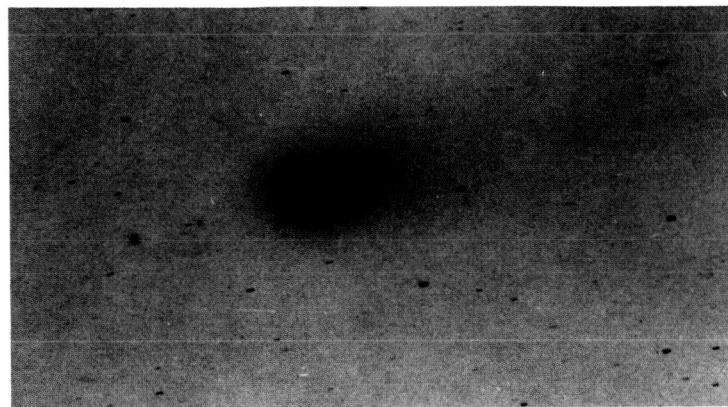


Figure 472. 1910 May 25.803; exposure 10 minutes; $r = 0.95$,
 $\Delta = 0.28$, $\theta = 70^\circ$, $\alpha = 93^\circ$, $S = 2.6$ E4

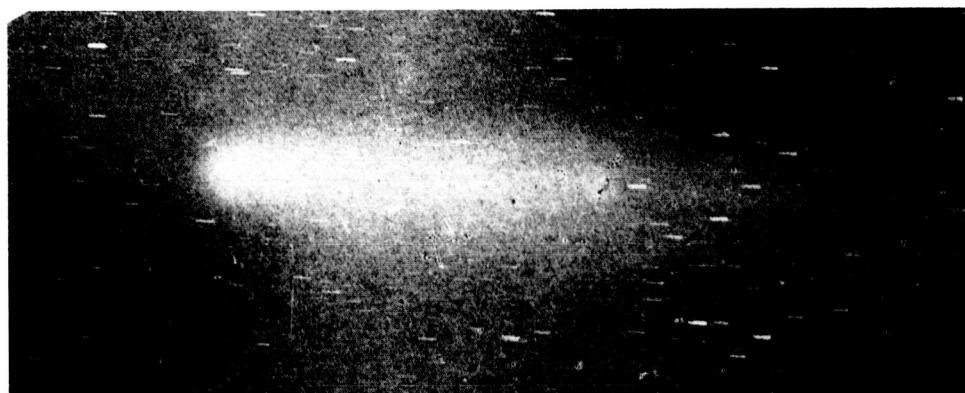


Figure 473. 1910 May 25.976; exposure 61 minutes; $r = 0.95$, $\Delta = 0.28$, $\theta = 70^\circ$,
 $\alpha = 92^\circ$, $S = 8.4$ E4

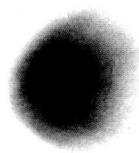


Figure 474-1. 1910 May 25.248; exposure 10 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 97^\circ$, $S = 5.7$ E3

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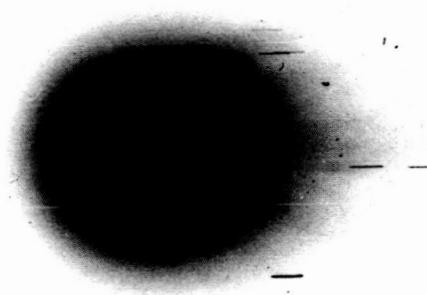


Figure 474-2. 1910 May 25.248; exposure 10 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 97^\circ$,
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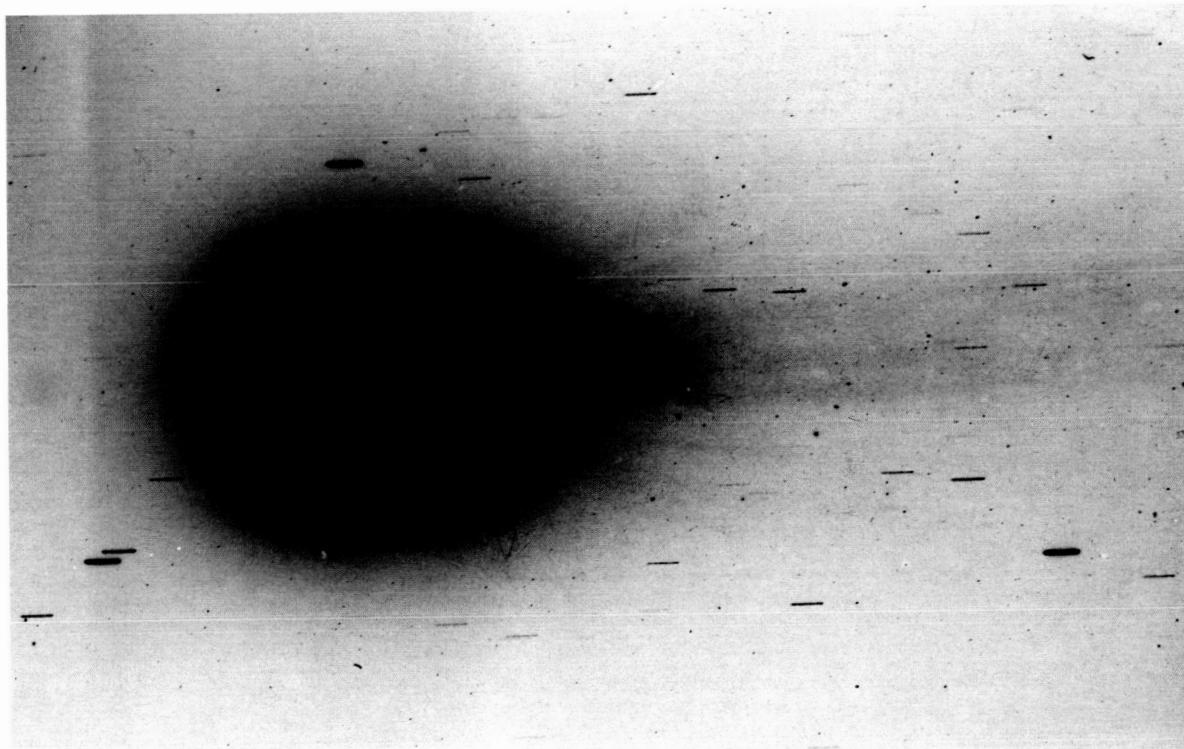


Figure 474-3. 1910 May 25.248; exposure 10 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 97^\circ$, $S = 5.7 \text{ E}3$

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Figure 475-1. 1910 May 25.255; exposure 5 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 97^\circ$, $S = 5.7$ E3

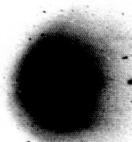


Figure 475-2. 1910 May 25.255; exposure 5 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 97^\circ$, $S = 5.7$ E3

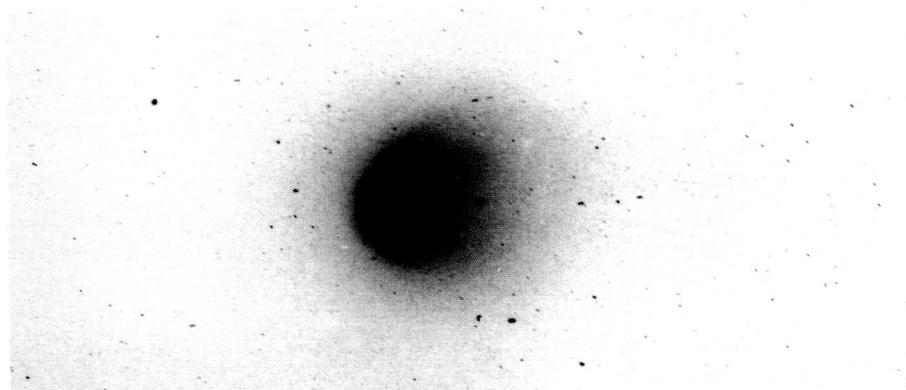


Figure 475-3. 1910 May 25.255; exposure 5 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 97^\circ$, $S = 5.7$ E3

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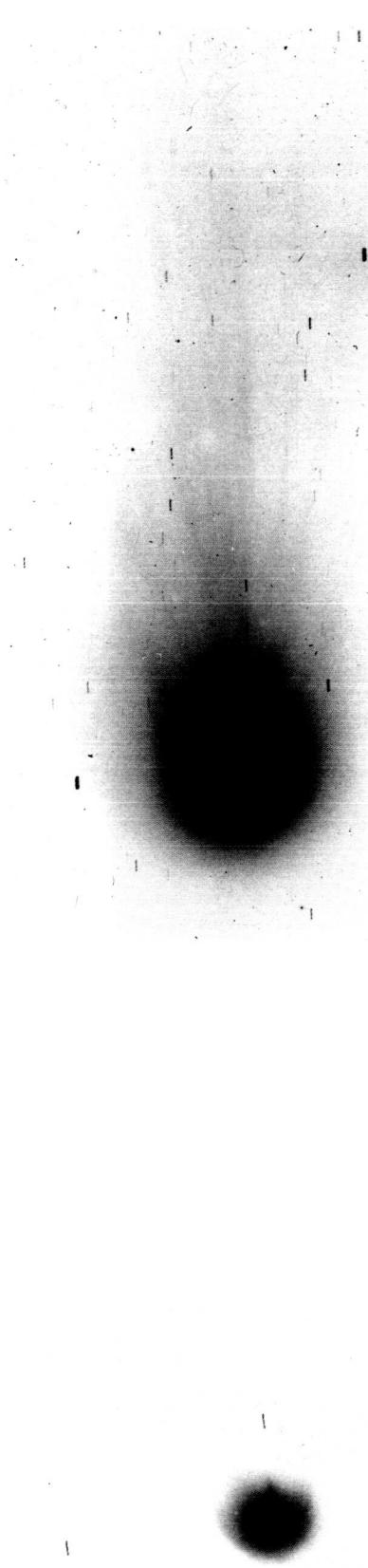


Figure 476-1. 1910 May 25.262; exposure 2 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$,
 $\alpha = 96^\circ$, $S = 5.7$ E3

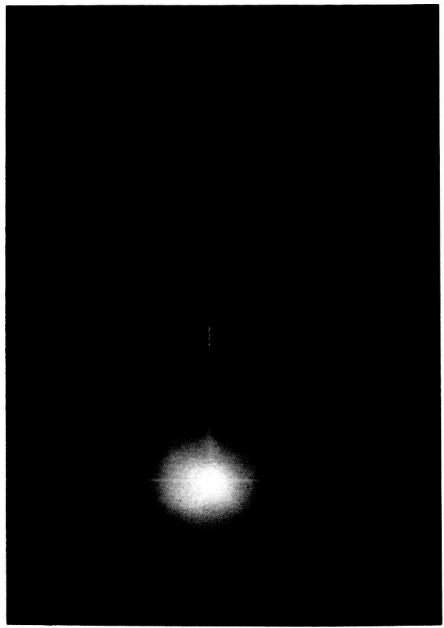


Figure 476-4. 1910 May 25.262; exposure 2 minutes;
 $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 96^\circ$, $S = 4.2$ E3

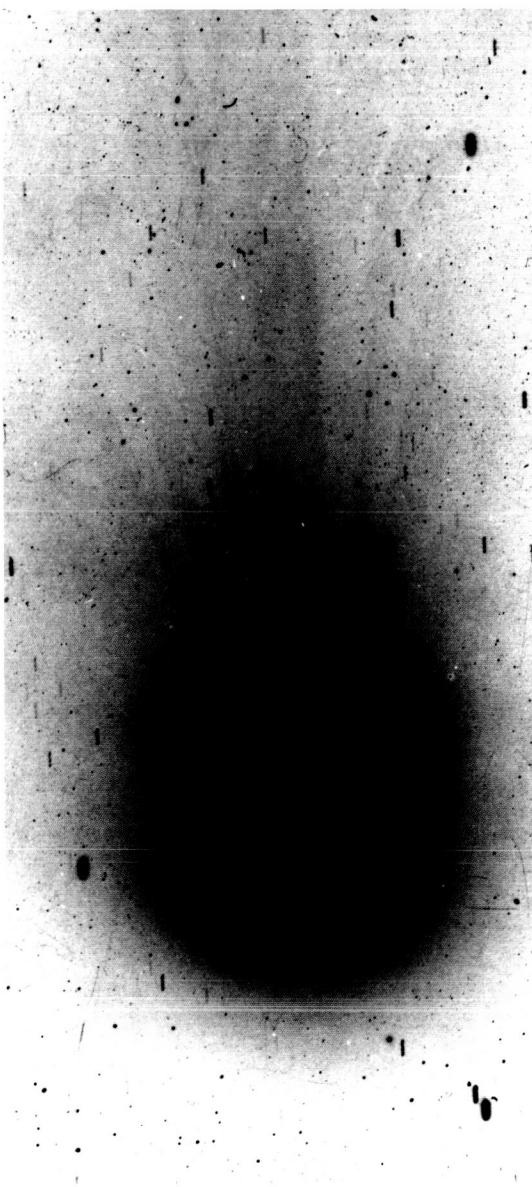


Figure 476-3. 1910 May 25.262; exposure 2 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 96^\circ$, $S = 5.7$ E3

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Figure 477-1. 1910 May 25.269; exposure 5 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 96^\circ$, $S = 5.7 \text{ E}3$

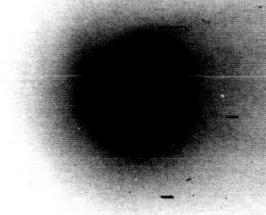


Figure 477-2. 1910 May 25.269; exposure 5 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 96^\circ$, $S = 7.4 \text{ E}3$

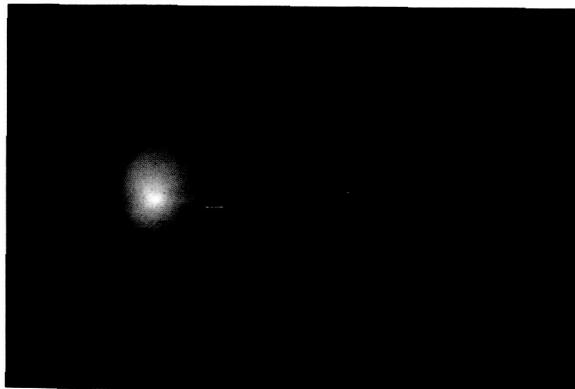


Figure 477-3. 1910 May 25.269; exposure 5 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 96^\circ$, $S = 4.2 \text{ E}3$

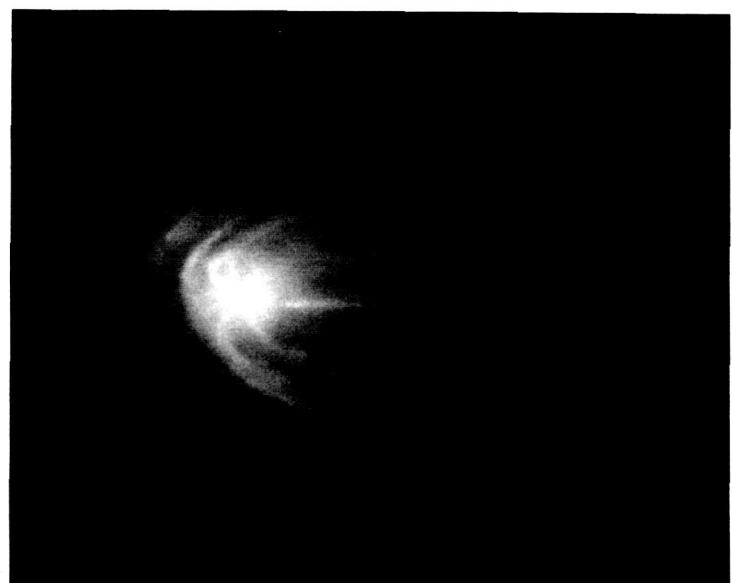


Figure 477-4. 1910 May 25.269; exposure 5 minutes; $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 96^\circ$, $S = 3.8 \text{ E}3$

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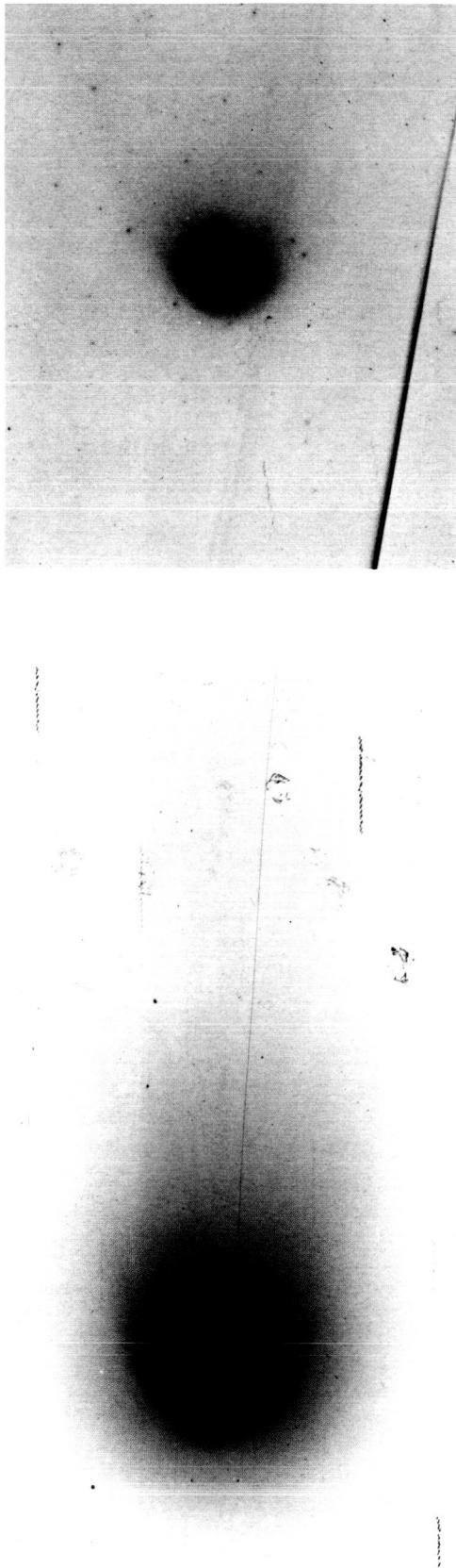


Figure 479-1. 1910 May 25.447; exposure 33 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$,
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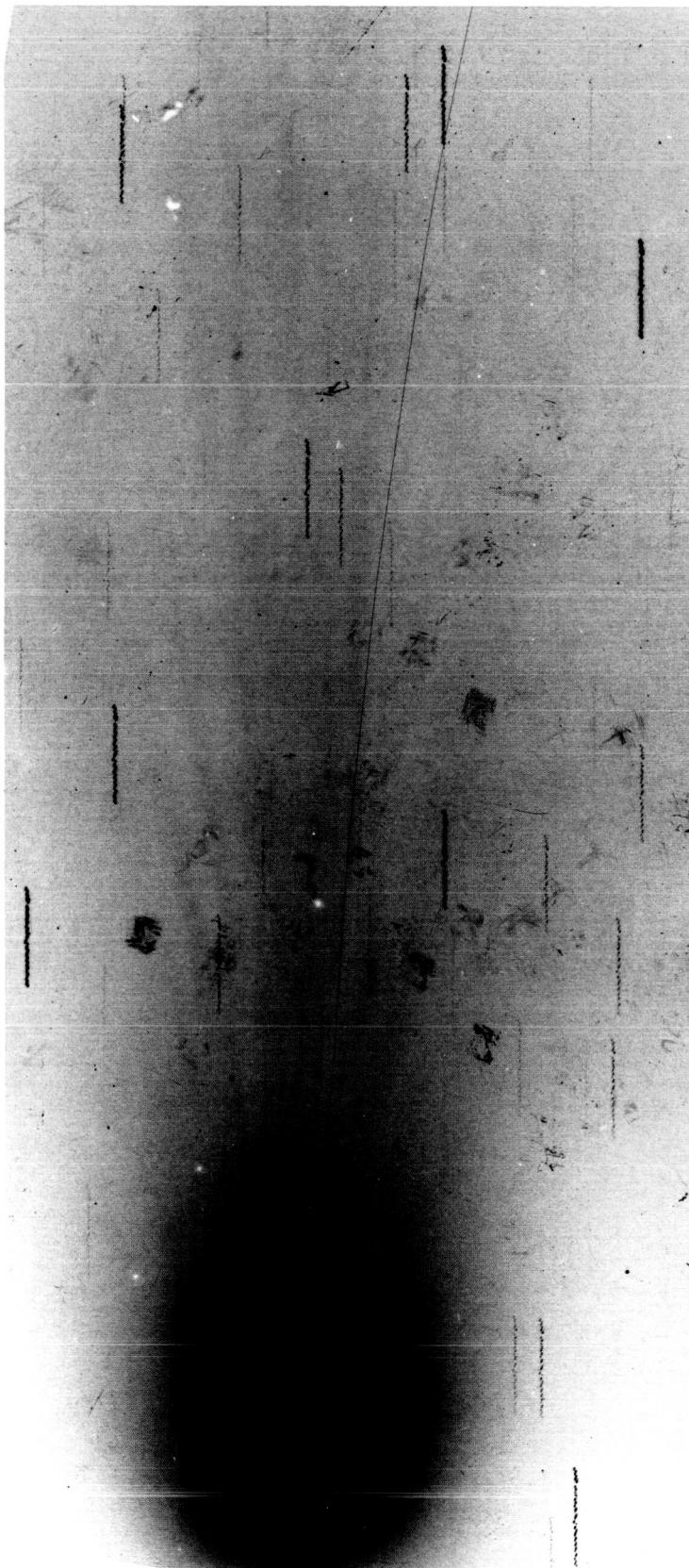


Figure 478. 1910 May 25.369; exposure 25 minutes;
 $r = 0.94$, $\Delta = 0.26$, $\theta = 68^\circ$, $\alpha = 96^\circ$, $S = 5.8$ E3

Figure 479-2. 1910 May 25.447; exposure 33 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 5.8$ E3

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Figure 480a-1. 1910 May 25.467; exposure 2 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 5.8$ E3

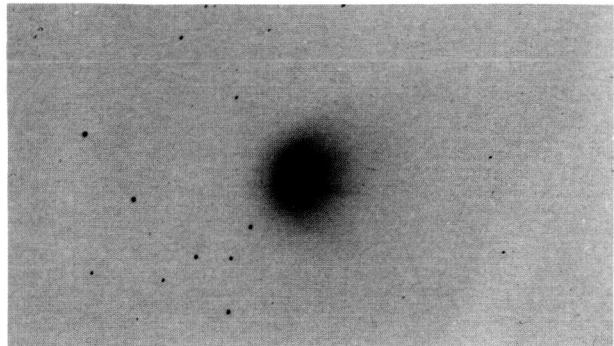


Figure 480a-2. 1910 May 25.467; exposure 2 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 5.8$ E3

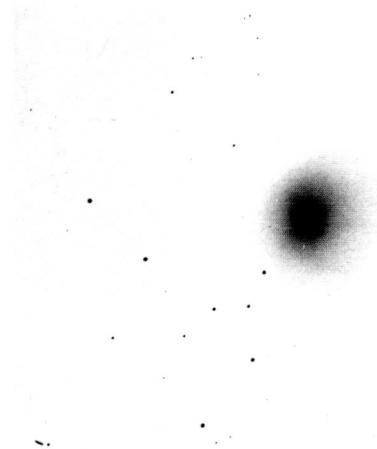


Figure 480b-1. 1910 May 25.463; exposure 3 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 5.8$ E3

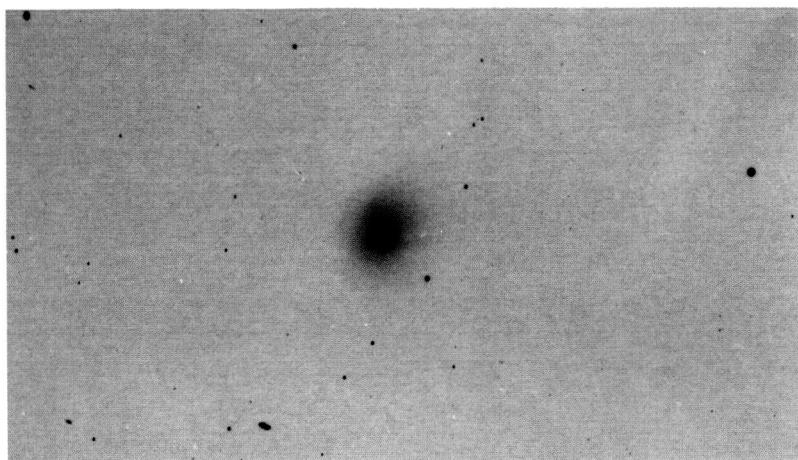


Figure 480b-2. 1910 May 25.463; exposure 3 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 5.8$ E3

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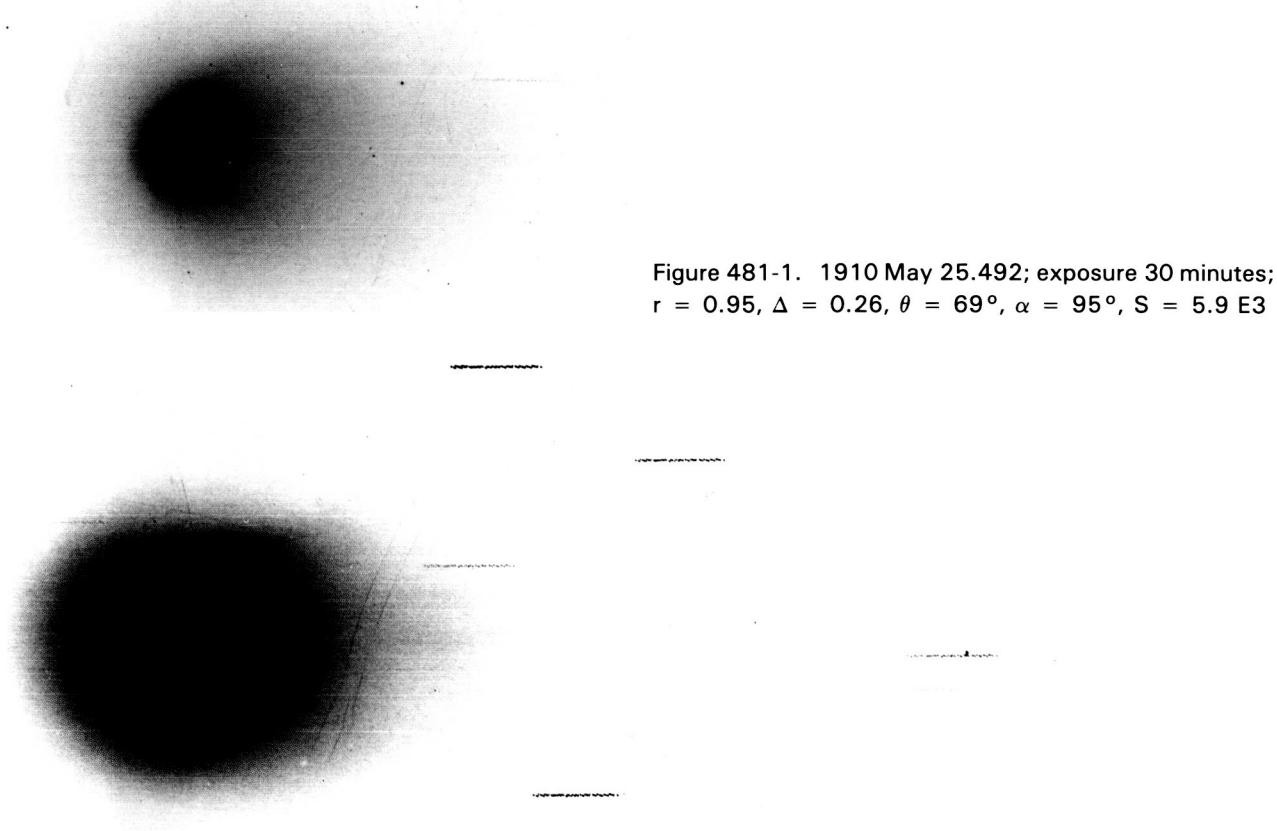


Figure 481-1. 1910 May 25.492; exposure 30 minutes;
 $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 5.9$ E3

Figure 481-2. 1910 May 25.492; exposure 30 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 5.9$ E3

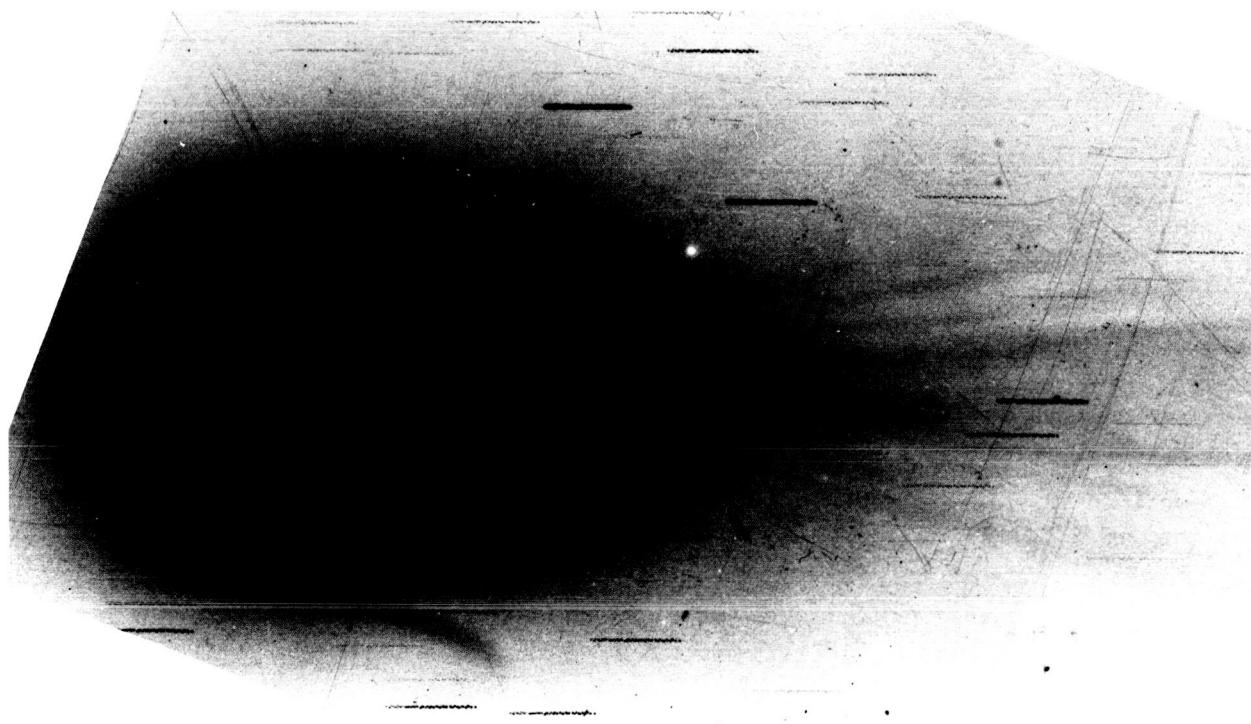


Figure 481-3. 1910 May 25.492; exposure 30 minutes; $r = 0.95$, $\Delta = 0.26$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 5.9$ E3

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Figure 482. 1910 May 25.506; exposure 5 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 95^\circ$, $S = 5.9$
E3

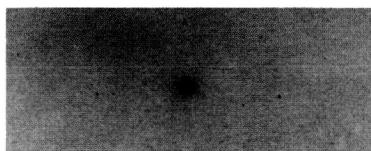


Figure 483a. 1910 May 25.666; exposure 0.30 minute; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 3.7$ E3

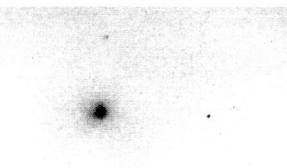


Figure 483b. 1910 May 25.667; exposure 1 minute; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 3.7$
E3

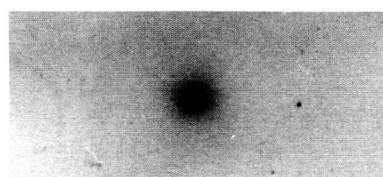


Figure 483c. 1910 May 25.669; exposure 0.50 minute; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 3.7$ E3

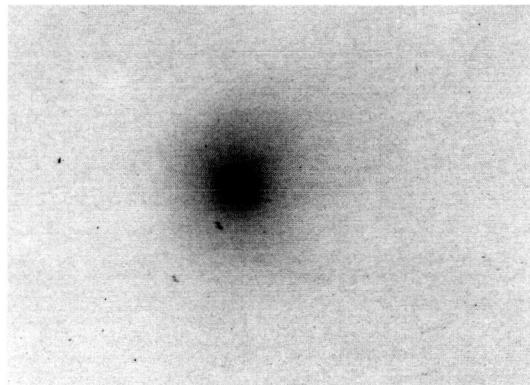


Figure 484-1. 1910 May 25.684; exposure 1 minute; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 3.9$ E3

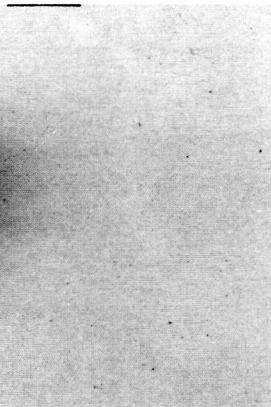


Figure 484-2. 1910 May 25.684; exposure 1 minute; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$, $\alpha = 94^\circ$, $S = 3.9$ E3

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Figure 485-1. 1910 May 25.684; exposure
30 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$,
 $\alpha = 94^\circ$, $S = 3.7$ E3

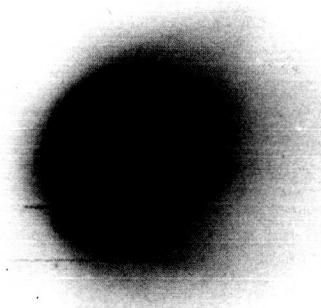


Figure 485-2. 1910 May 25.684; exposure
30 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 69^\circ$,
 $\alpha = 94^\circ$, $S = 3.7$ E3

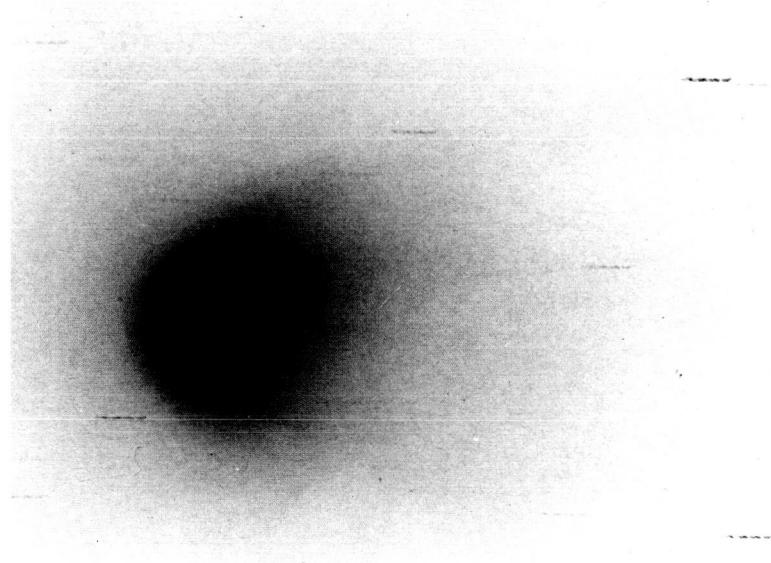


Figure 486. 1910 May 25.693; exposure 10 minutes; $r = 0.95$, $\Delta = 0.27$,
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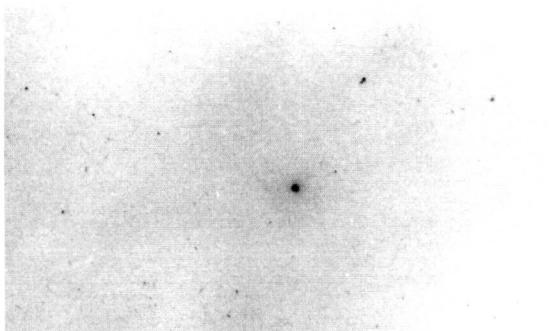


Figure 487a. 1910 May 25.704; exposure 0.16 minute; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, S = 3.7 E3

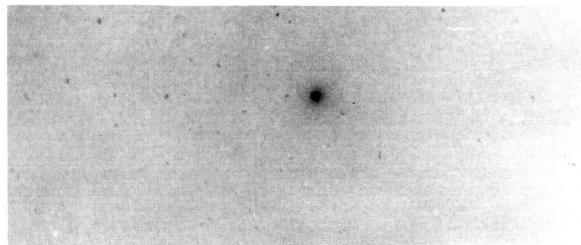


Figure 487b. 1910 May 25.705; exposure 0.30 minute; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, S = 3.7 E3

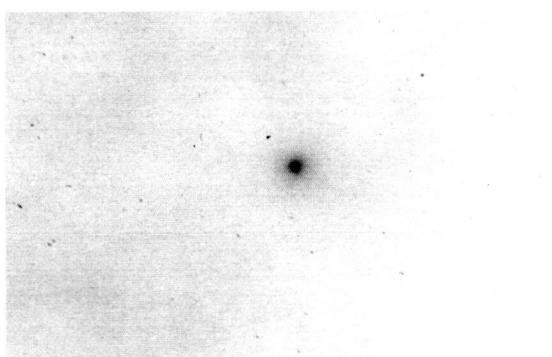


Figure 487c. 1910 May 25.706; exposure 0.50 minute; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, S = 3.7 E3

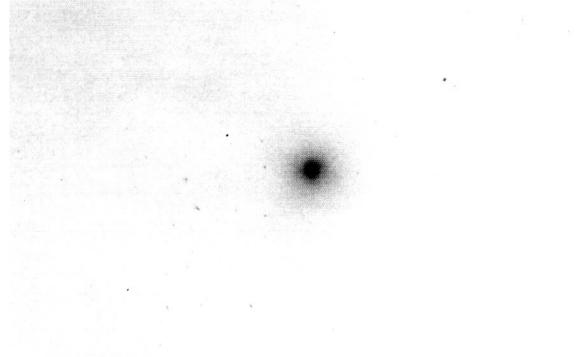


Figure 487d. 1910 May 25.707; exposure 1 minute; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, S = 3.7 E3

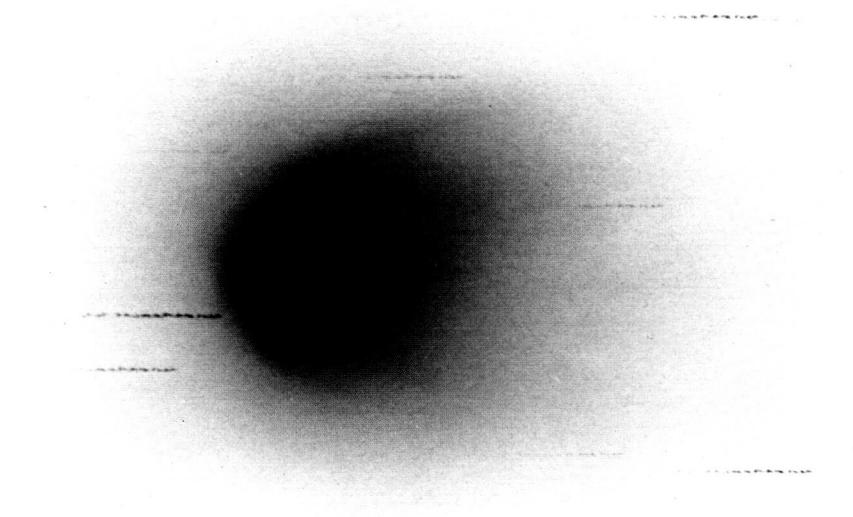


Figure 488. 1910 May 25.705; exposure 30 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, S = 3.9 E3

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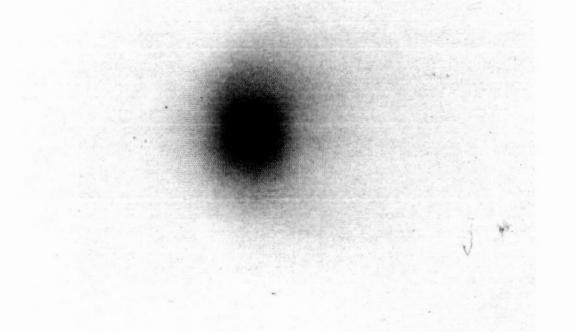


Figure 489-1. 1910 May 25.720; exposure 10 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, $S = 3.9$ E3

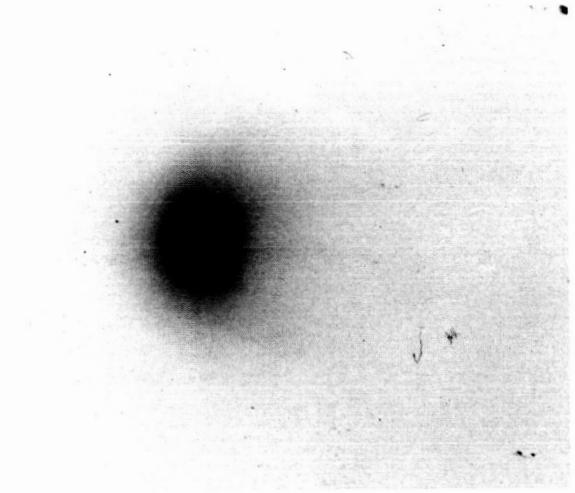


Figure 489-2. 1910 May 25.720; exposure 10 minutes; $R = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, $S = 3.9$ E3

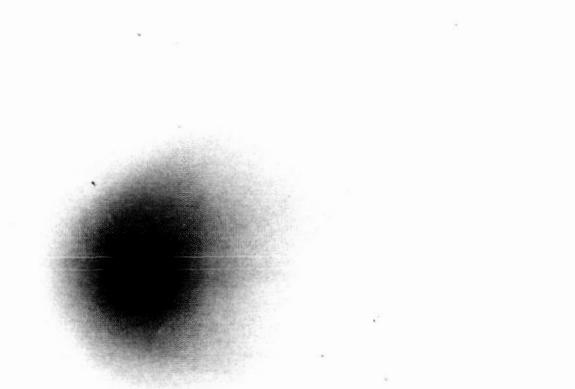


Figure 490. 1910 May 25.743; exposure 10 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, $S = 3.9$ E3

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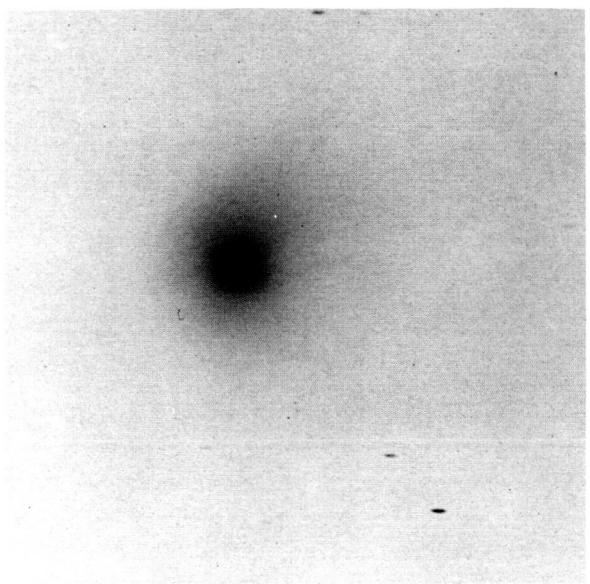


Figure 491-1. 1910 May 25.749; exposure 2 minutes; $r = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, $S = 3.9$ E3

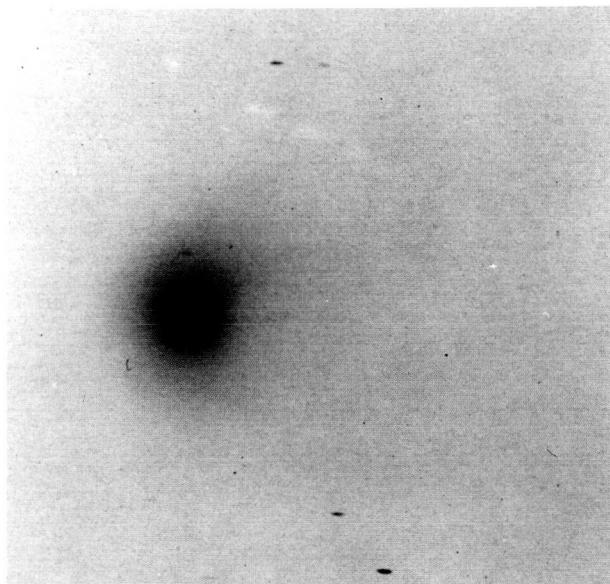


Figure 491-2. 1910 May 25.749; exposure 2 minutes; $R = 0.95$, $\Delta = 0.27$, $\theta = 70^\circ$, $\alpha = 94^\circ$, $S = 3.9$ E3

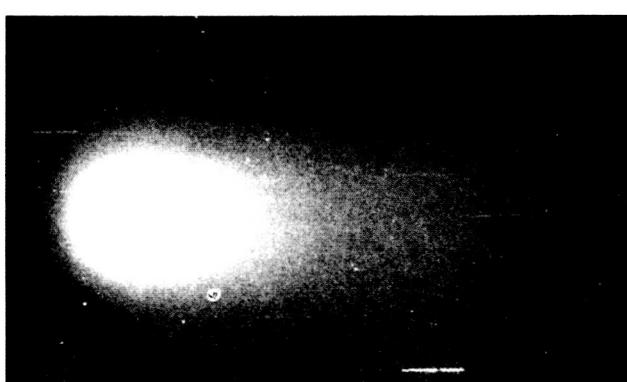


Figure 492. 1910 May 25.990; exposure 99 minutes; $r = 0.95$, $\Delta = 0.28$, $\theta = 71^\circ$, $\alpha = 92^\circ$, $S = 1.8$ E4

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Figure 493. 1910 May 26.043; exposure 75 minutes; $r = 0.96$, $\Delta = 0.28$, $\theta = 71^\circ$, $\alpha = 92^\circ$, $S = 1.5 \text{ E}5$

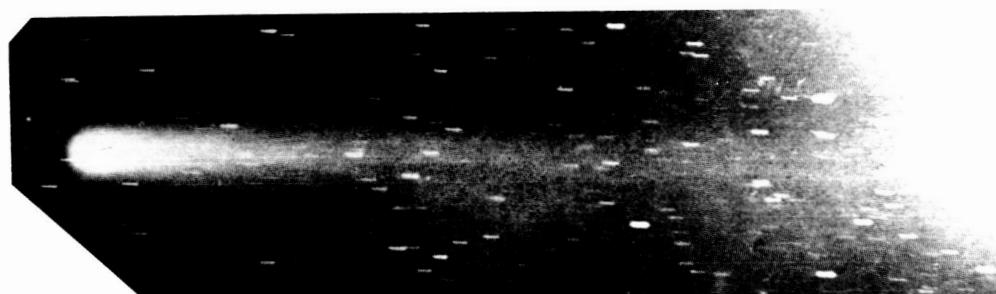


Figure 494. 1910 May 26.047; exposure 84 minutes; $r = 0.96$, $\Delta = 0.28$, $\theta = 71^\circ$, $\alpha = 92^\circ$, $S = 8.8 \text{ E}4$



Figure 495. 1910 May 26.050; exposure 95 minutes; $r = 0.96$, $\Delta = 0.28$, $\theta = 71^\circ$, $\alpha = 92^\circ$, $S = 2.2 \text{ E}4$

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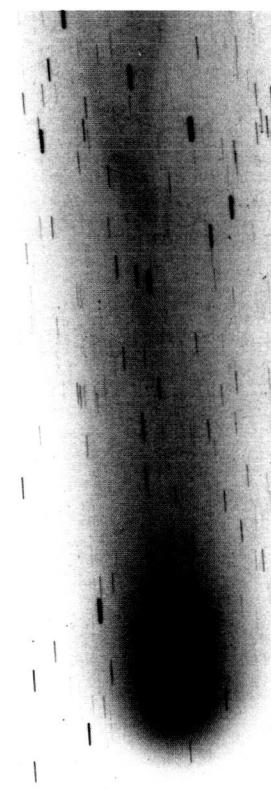


Figure 496-1. 1910 May 26.450; exposure 50 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 90^\circ$, $S = 3.5$ E4

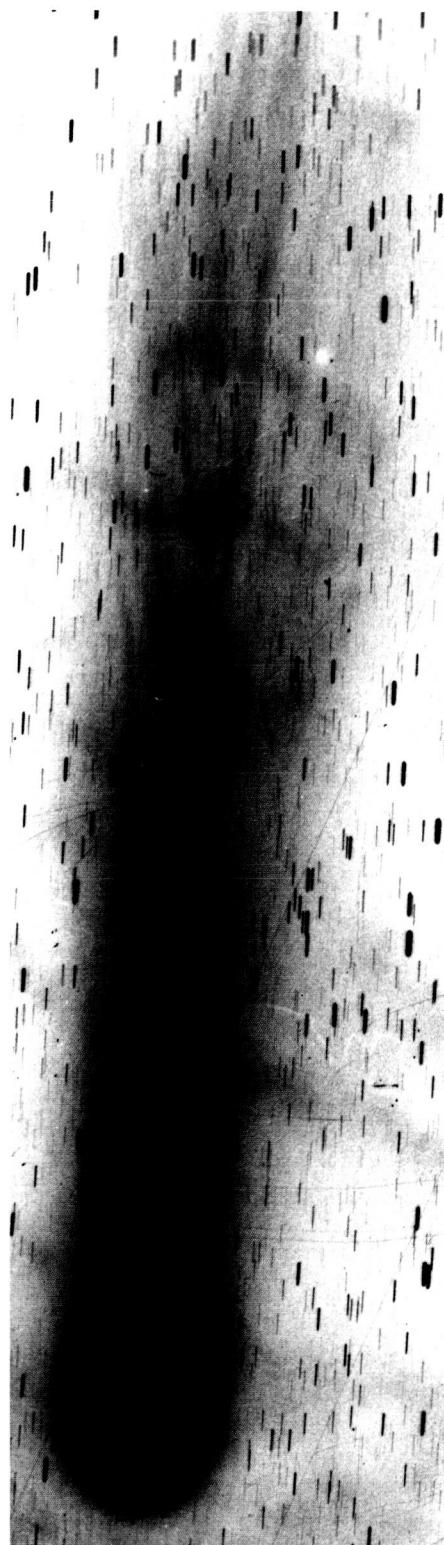


Figure 496-2. 1910 May 26.450; exposure 50 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 90^\circ$, $S = 3.5$ E4

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Figure 497-1. 1910 May 26.474; exposure 8 minutes;
 $r = 0.96, \Delta = 0.30, \theta = 72^\circ, \alpha = 90^\circ, S = 3.5 E4$

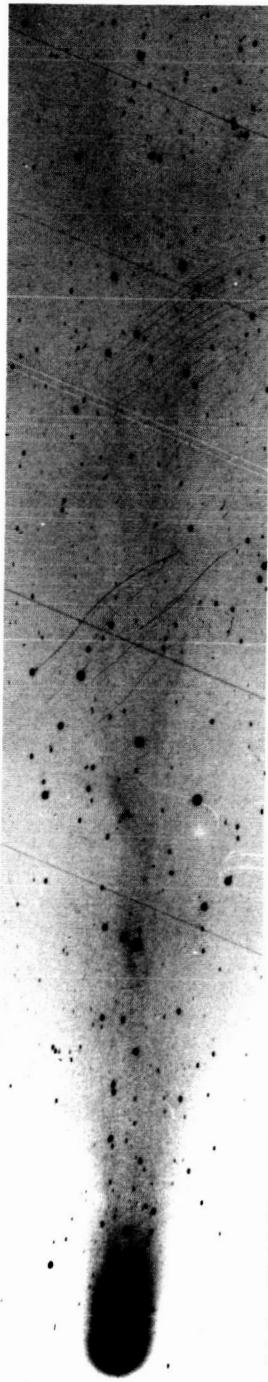


Figure 498. 1910 May 26.533; exposure 5 minutes;
 $r = 0.96, \Delta = 0.30, \theta = 72^\circ, \alpha = 89^\circ, S = 3.6 E4$

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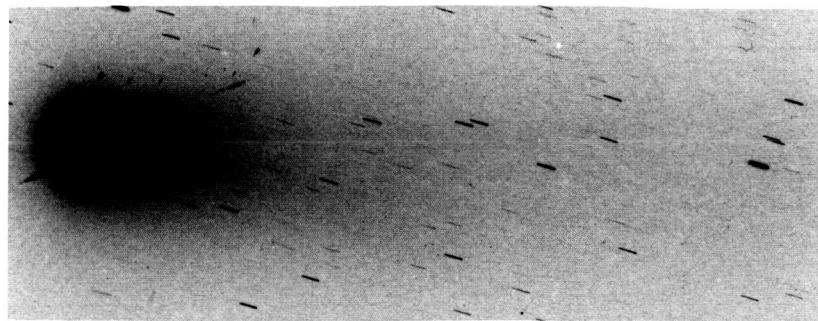


Figure 499. 1910 May 26.577; exposure 24 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 1.8$ E4

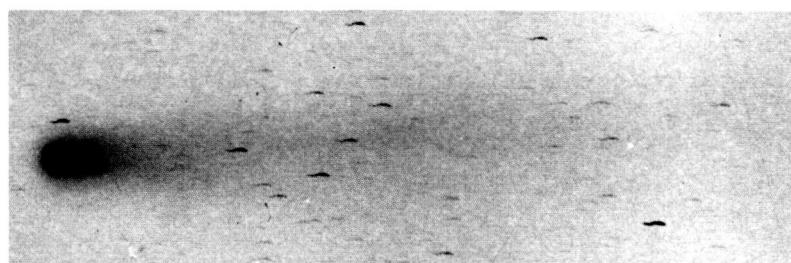


Figure 500. 1910 May 26.588; exposure 90 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 6.7$ E4



Figure 501. 1910 May 26.597; exposure 30 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 1.8$ E4

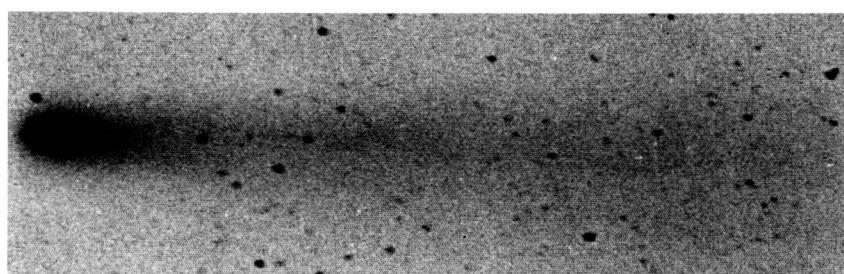


Figure 502. 1910 May 26.618; exposure 27 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 7.0$ E4

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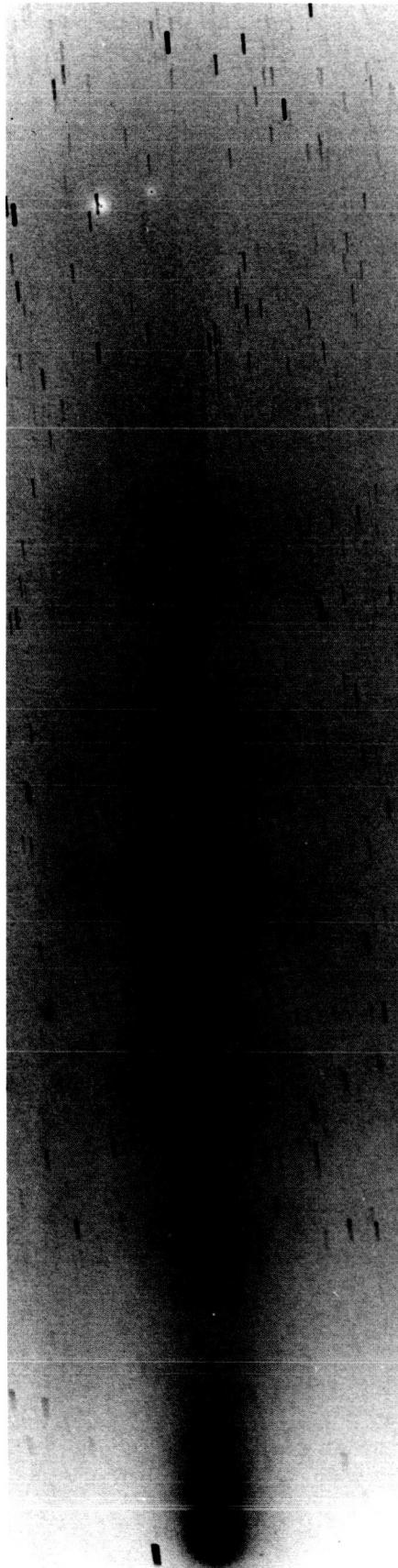


Figure 503. 1910 May 26.623; exposure 52 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 3.9$ E4

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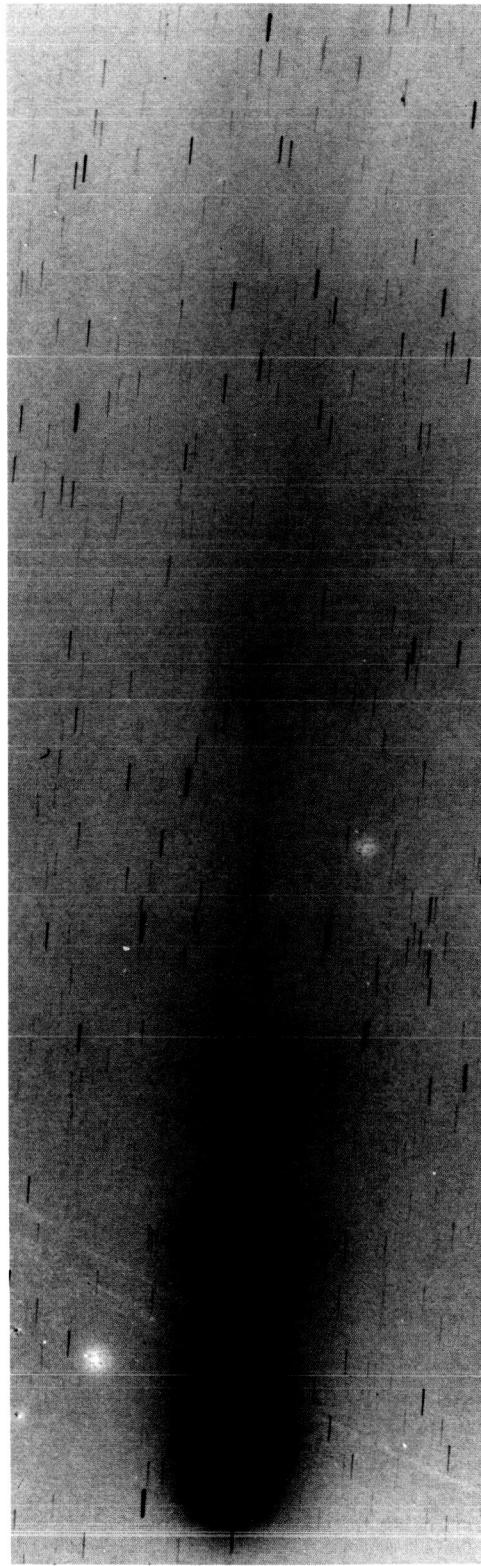


Figure 504. 1910 May 26.624; exposure 51 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 3.0$ E4

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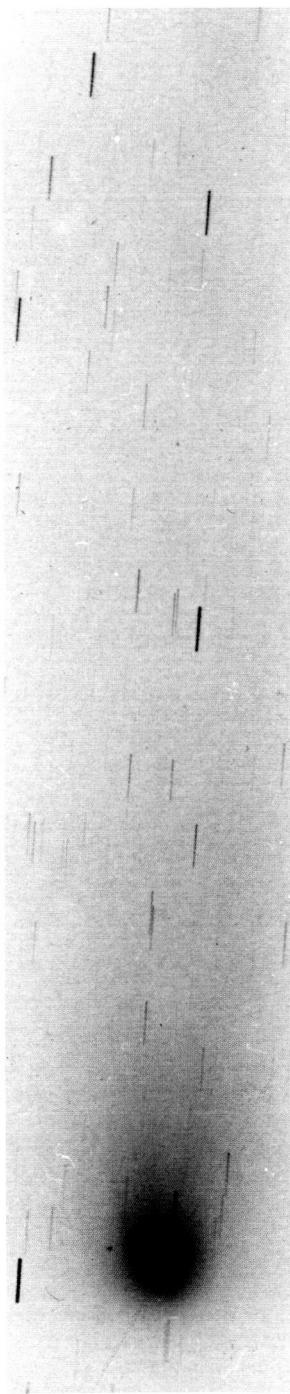


Figure 505-1. 1910 May 26.624; exposure 49 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 1.8 \text{ E}4$

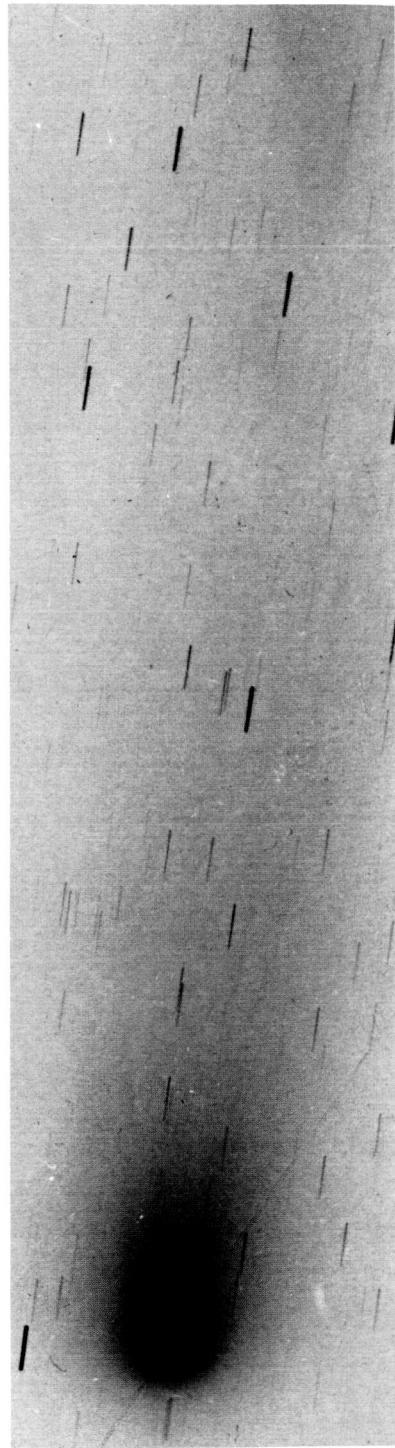


Figure 505-2. 1910 May 26.624; exposure 49 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 1.8 \text{ E}4$

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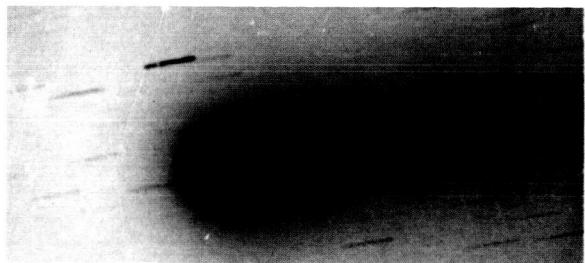


Figure 506. 1910 May 26.631; exposure 77 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 2.3 \text{ E}4$



Figure 507. 1910 May 26.634; exposure 20 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 7.4 \text{ E}4$

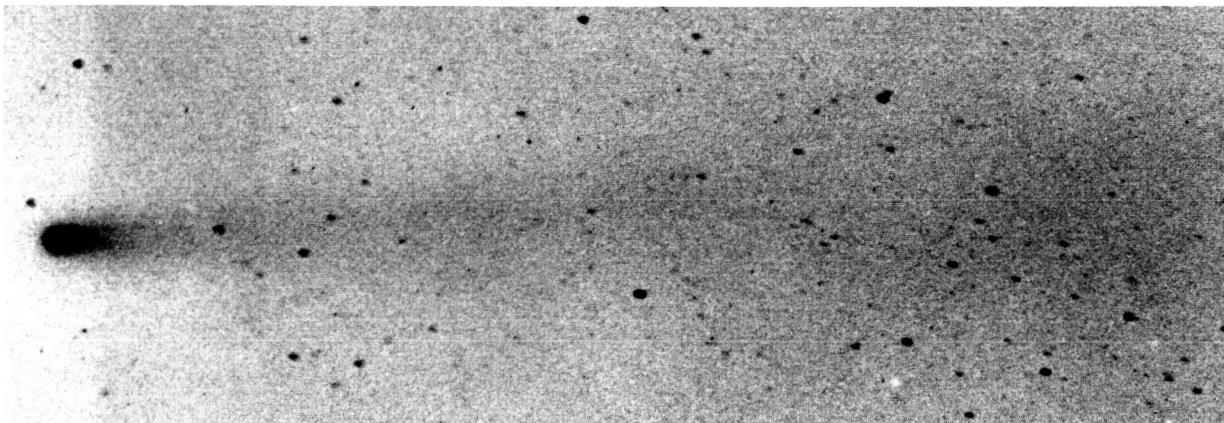


Figure 508. 1910 May 26.665; exposure 31 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 7.6 \text{ E}4$

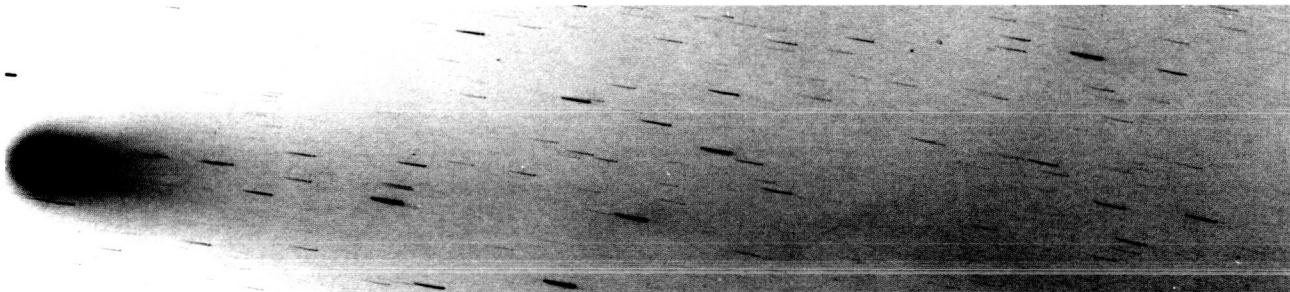


Figure 509. 1910 May 26.667; exposure 57 minutes; $r = 0.96$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 3.0 \text{ E}4$

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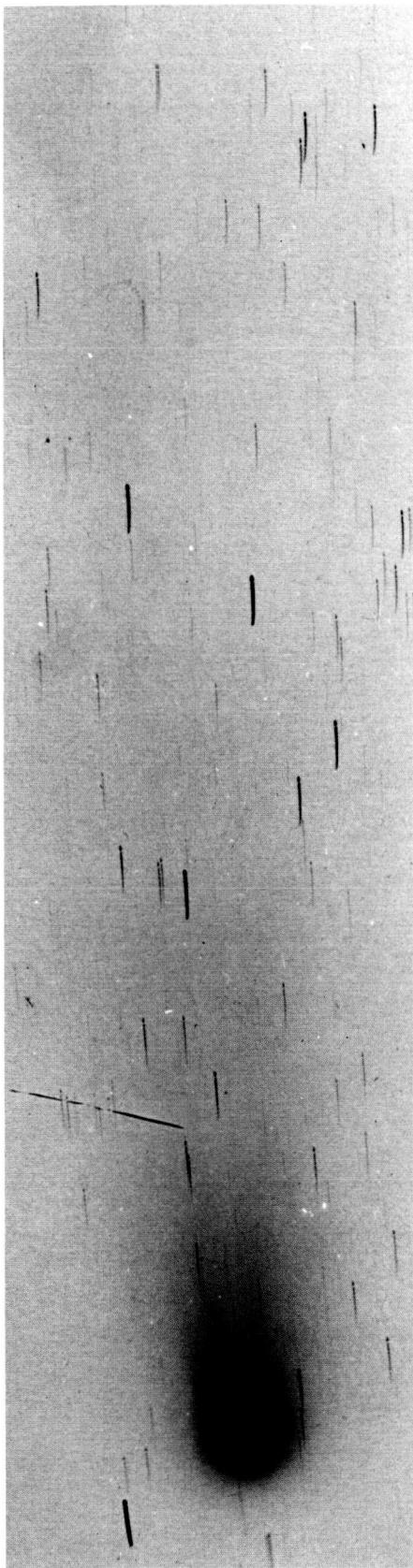


Figure 510. 1910 May 26.667; exposure 57 minutes; $r = 0.96$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 1.8 \text{ E}4$

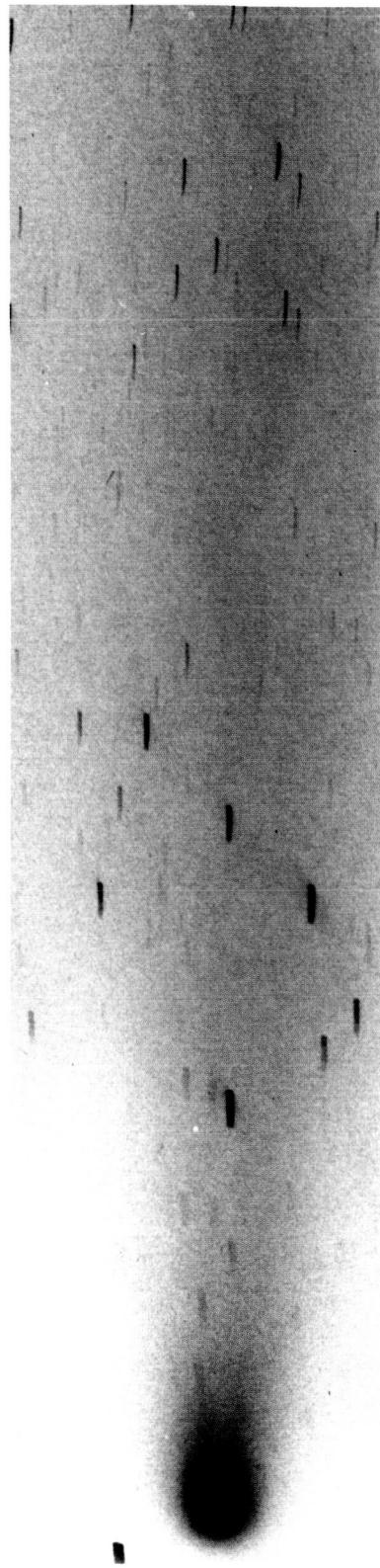


Figure 511. 1910 May 26.667; exposure 57 minutes; $r = 0.96$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 3.9 \text{ E}4$

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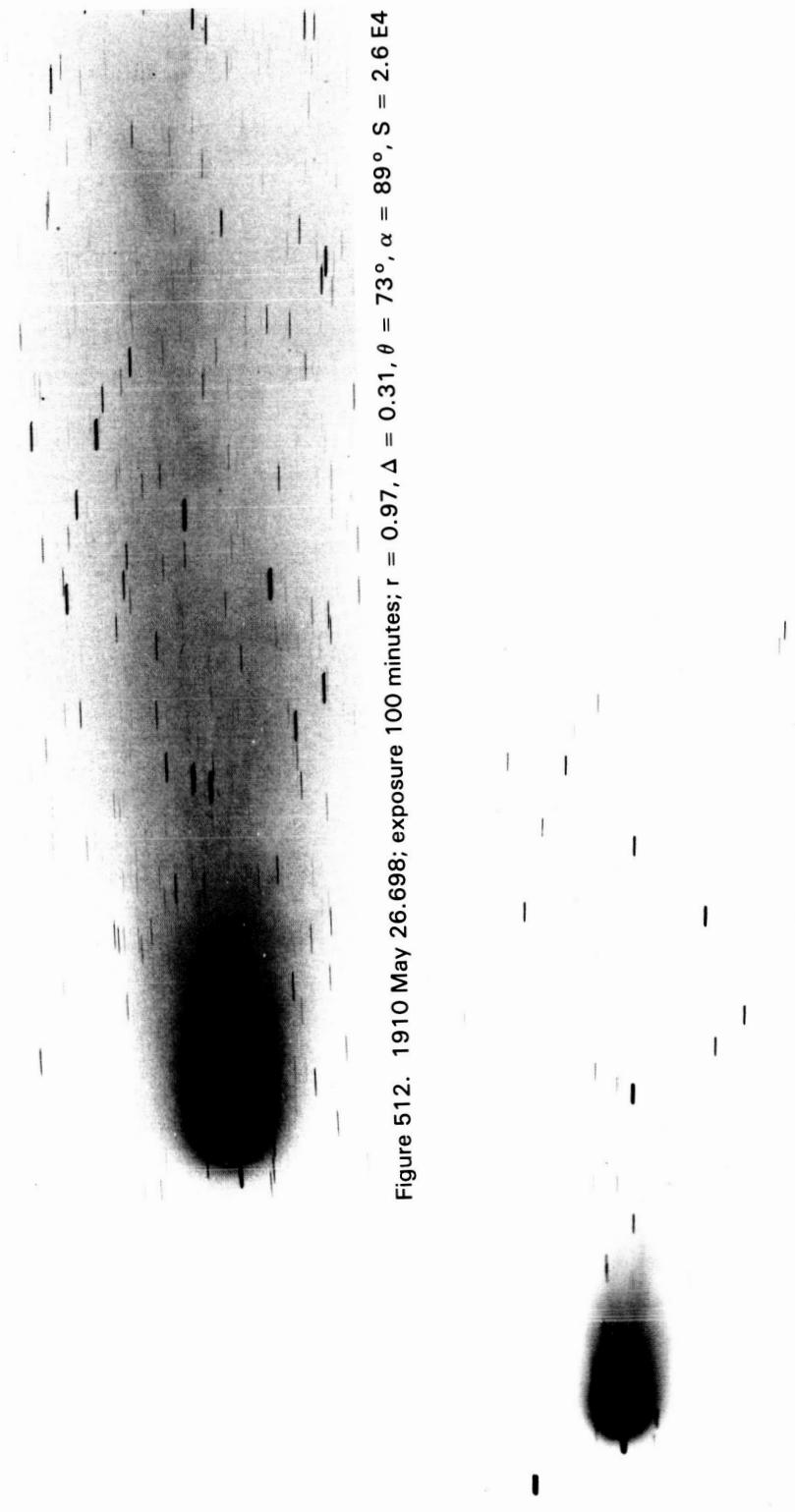


Figure 512. 1910 May 26.698; exposure 100 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 2.6$ E4

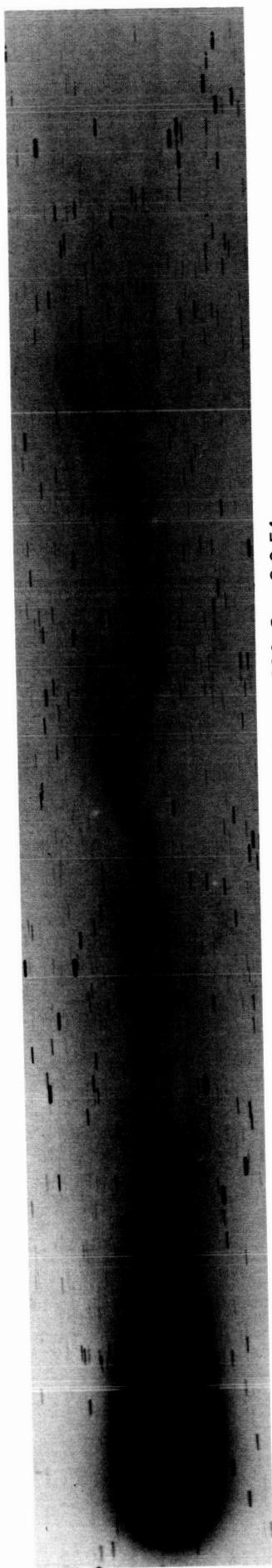


Figure 513-1. 1910 May 26.712; exposure 40 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$,
 $\alpha = 89^\circ$, $S = 3.0$ E4

Figure 513-2. 1910 May 26.712; exposure 40 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 3.0$ E4

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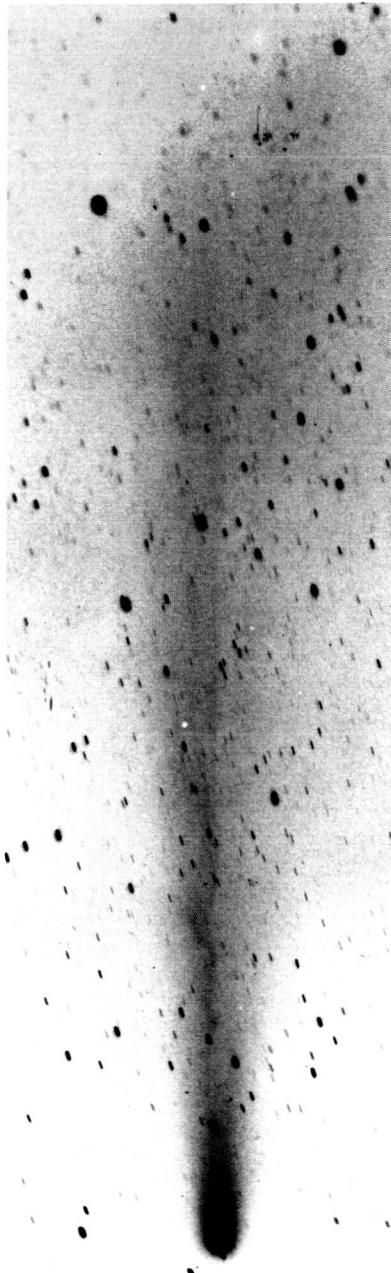


Figure 514. 1910 May 26.715; exposure 32 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 8.8$ E4

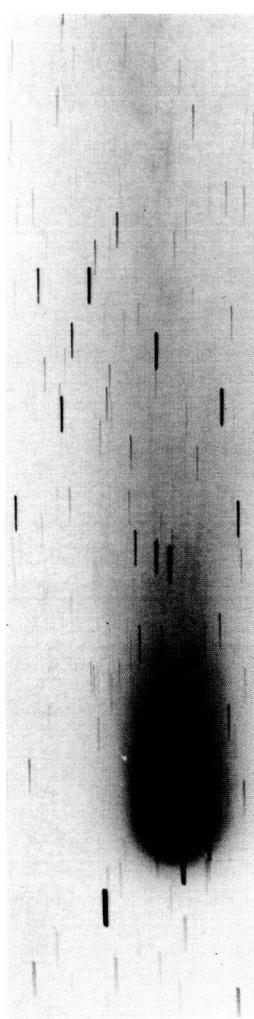


Figure 515-1. 1910 May 26.726; exposure 82 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$,
 $\alpha = 89^\circ$, $S = 3.5$ E4



Figure 515-2. 1910 May 26.726; exposure 82 minutes; $r = 0.97$, $\Delta = 0.21$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 3.5$ E4

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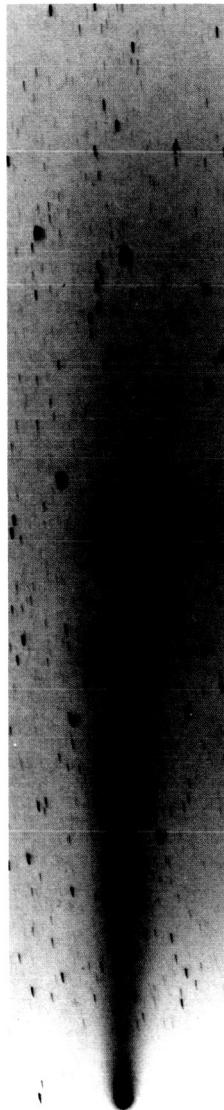


Figure 516. 1910 May 26.726; exposure 82 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 1.5 \text{ E}5$

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Figure 517-1. 1910 May 26.741; exposure 41 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$,
 $\alpha = 88^\circ$, $S = 3.0 \text{ E}4$

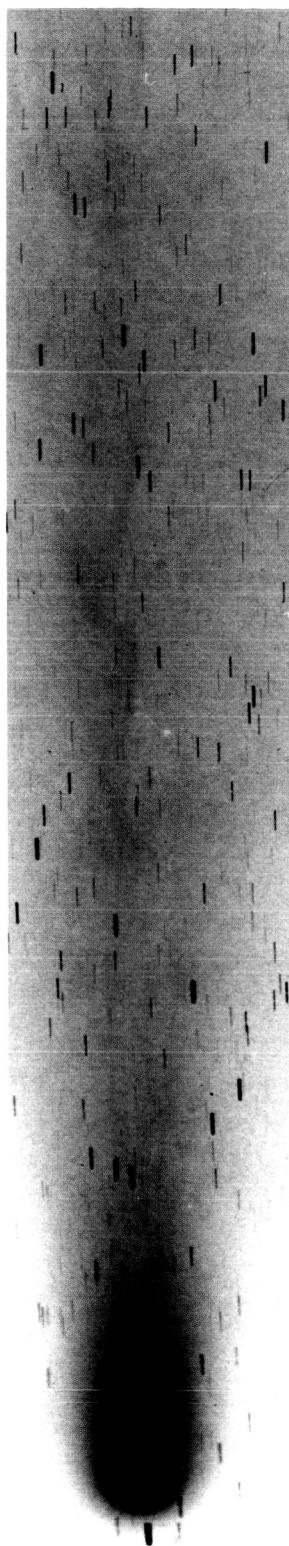


Figure 517-2. 1910 May 26.741; exposure 41 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 88^\circ$, $S = 3.0 \text{ E}4$

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Figure 518-1. 1910 May 26.246; exposure 2 minutes;
 $r = 0.96$, $\Delta = 0.29$, $\theta = 71^\circ$, $\alpha = 91^\circ$, S = 6.4 E3

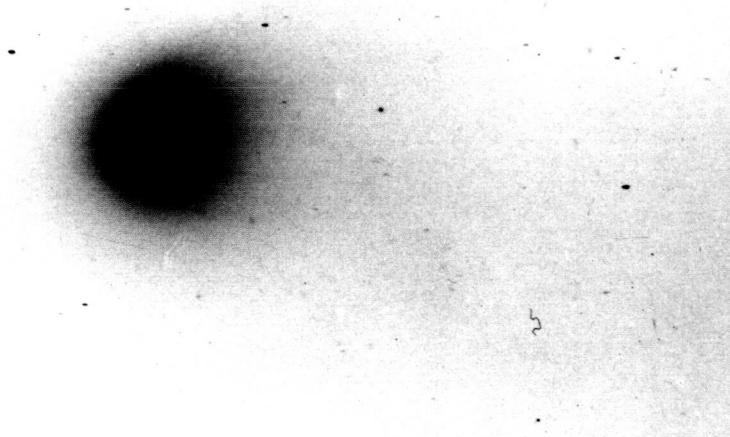


Figure 518-2. 1910 May 26.246; exposure 2 minutes; $r = 0.96$, Δ
= 0.29, $\theta = 71^\circ$, $\alpha = 91^\circ$, S = 6.4 E3

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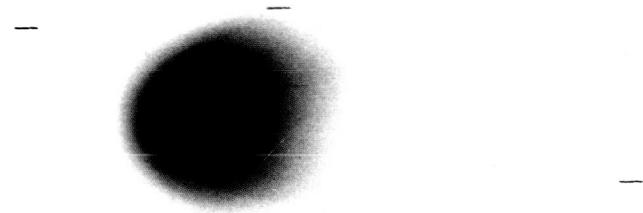


Figure 519-1. 1910 May 26.255; exposure 10 minutes; $r = 0.96$, $\Delta = 0.29$, $\theta = 71^\circ$, $\alpha = 91^\circ$, $S = 6.4$ E3

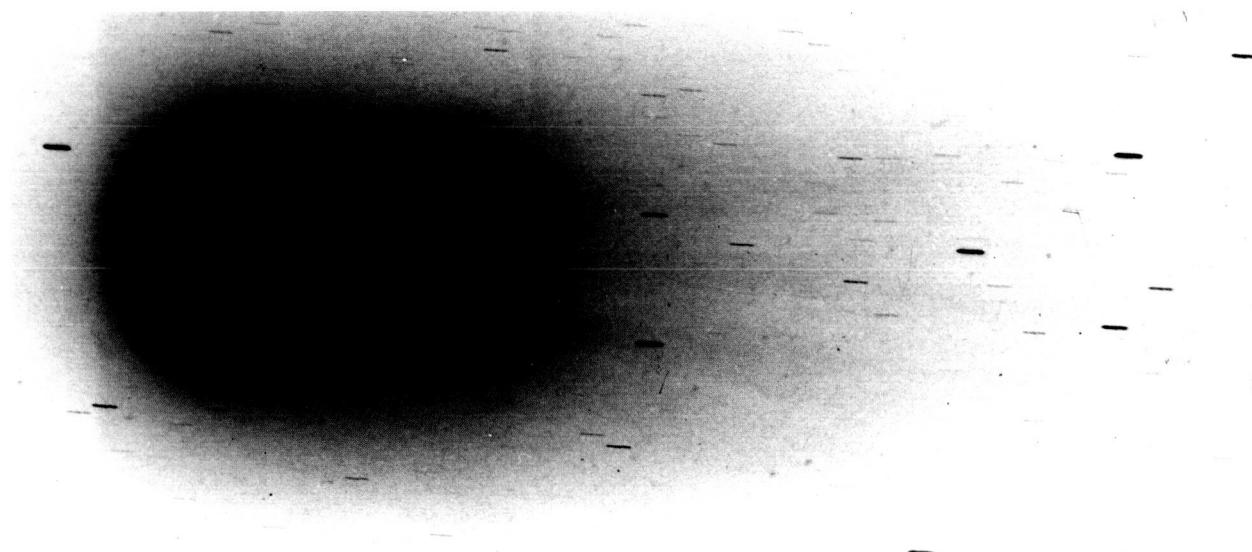


Figure 519-2. 1910 May 26.255; exposure 10 minutes; $r = 0.96$, $\Delta = 0.29$, $\theta = 71^\circ$, $\alpha = 91^\circ$, $S = 6.4$ E3

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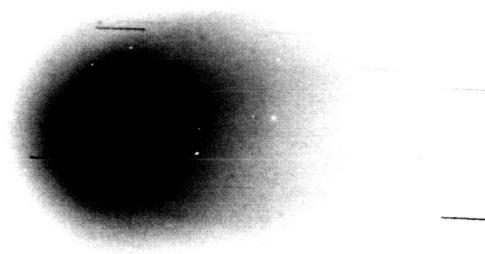


Figure 520-1. 1910 May 26.275; exposure 20 minutes; $r = 0.96$,
 $\Delta = 0.29$, $\theta = 71^\circ$, $\alpha = 91^\circ$, $S = 6.4$ E3



Figure 520-2. 1910 may 26.275; exposure 20 minutes; $r = 0.96$, $\Delta = 0.29$, $\theta = 71^\circ$, $\alpha = 91^\circ$,
 $S = 6.4$ E3

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Figure 521-1. 1910 May 26.289; exposure 5 minutes; $r = 0.96$, $\Delta = 0.29$, $\theta = 71^\circ$, $\alpha = 91^\circ$, S = 6.4 E3

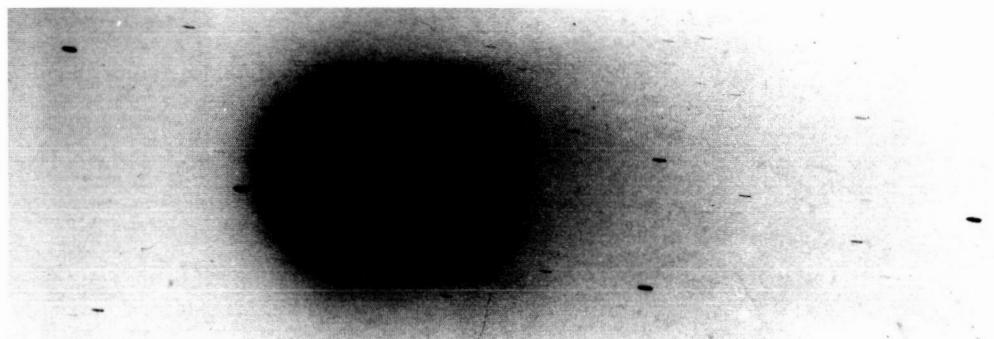


Figure 521-2. 1910 May 26.289; exposure 5 minutes; $r = 0.96$, $\Delta = 0.29$, $\theta = 71^\circ$, $\alpha = 91^\circ$,
S = 6.4 E3

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Figure 522-1. 1910 May 26.298; exposure 5 minutes; $r = 0.96$, $\Delta = 0.29$, $\theta = 71^\circ$, $\alpha = 91^\circ$, $S = 6.5$ E3

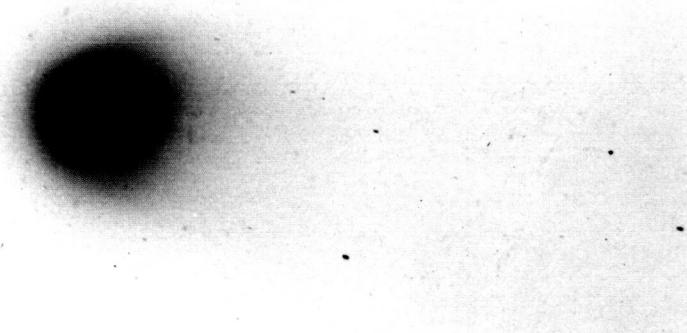


Figure 522-2. 1910 May 26.298; exposure 5 minutes; $r = 0.96$, $\Delta = 0.29$, $\theta = 71^\circ$, $\alpha = 91^\circ$, $S = 6.5$ E3

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Figure 523-1. 1910 May 26.348; exposure 3 minutes; $r = 0.96$, $\Delta = 0.29$, $\theta = 72^\circ$, $\alpha = 90^\circ$, S = 6.5 E3

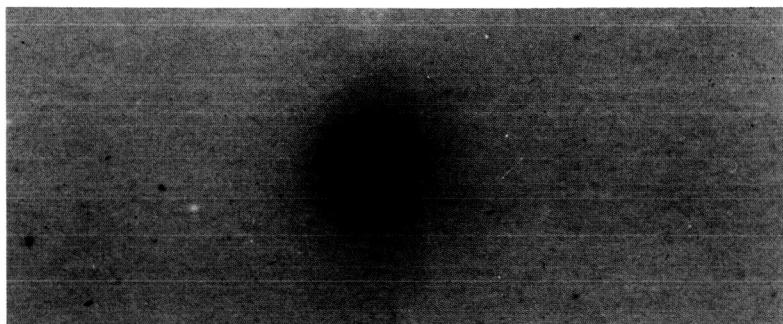


Figure 523-2. 1910 May 26.348; exposure 3 minutes; $r = 0.96$, $\Delta = 0.29$, $\theta = 72^\circ$, $\alpha = 90^\circ$, S = 6.5 E3

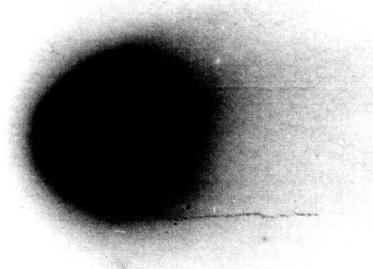


Figure 524. 1910 May 26.385; exposure 90 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 90^\circ$, S = 6.5 E3

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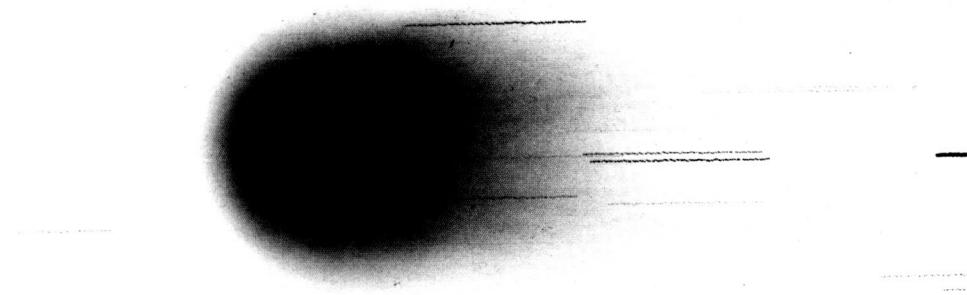


Figure 525-1. 1910 May 26.460; exposure 75 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 90^\circ$, $S = 6.6$ E3

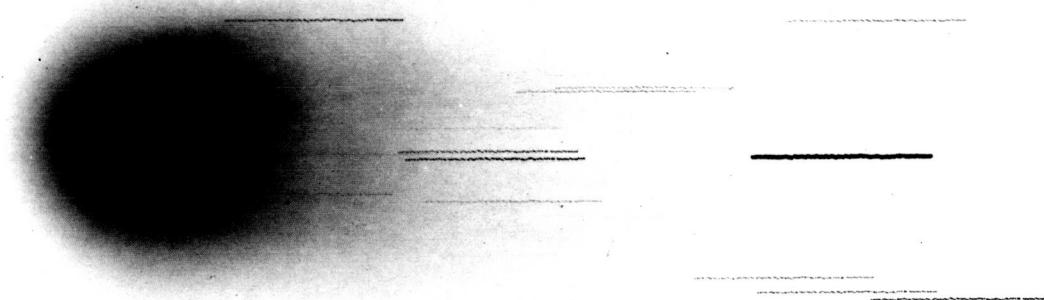


Figure 525-2. 1910 May 26.460; exposure 75 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 90^\circ$, $S = 6.6$ E3



Figure 525-3. 1910 May 26.460; exposure 75 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 90^\circ$, $S = 6.6$ E3

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Figure 526a. 1910 May
26.494; exposure 5 min-
utes; $r = 0.96$, $\Delta = 0.30$,
 $\theta = 72^\circ$, $\alpha = 90^\circ$, S =
6.6 E3

Figure 526b. 1910 May
26.497; exposure 11 min-
utes; $r = 0.96$, $\Delta = 0.30$,
 $\theta = 72^\circ$, $\alpha = 90^\circ$, S =
6.6 E3

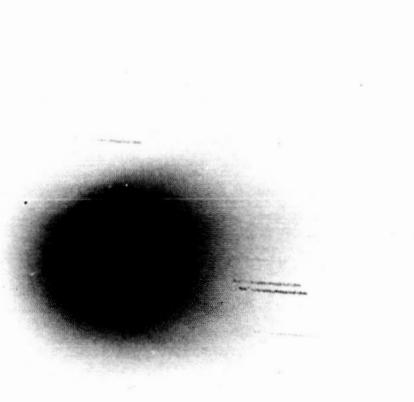


Figure 527-1. 1910 May 26.515; exposure
30 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$,
 $\alpha = 90^\circ$, S = 6.6 E3

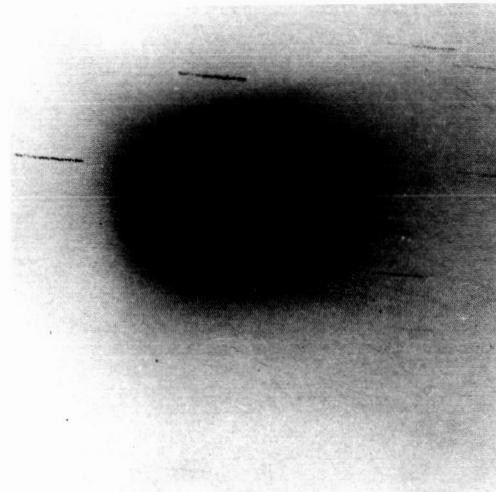


Figure 527-2. 1910 May 26.515; exposure
30 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$,
 $\alpha = 90^\circ$, S = 6.6 E3

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Figure 528a. 1910 May 26.531; exposure 2 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, S = 6.6 E3

Figure 528b. 1910 May 26.529; exposure 3 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, S = 6.6 E3



Figure 529-1. 1910 May 26.570; exposure 29 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, S = 1.1 E4

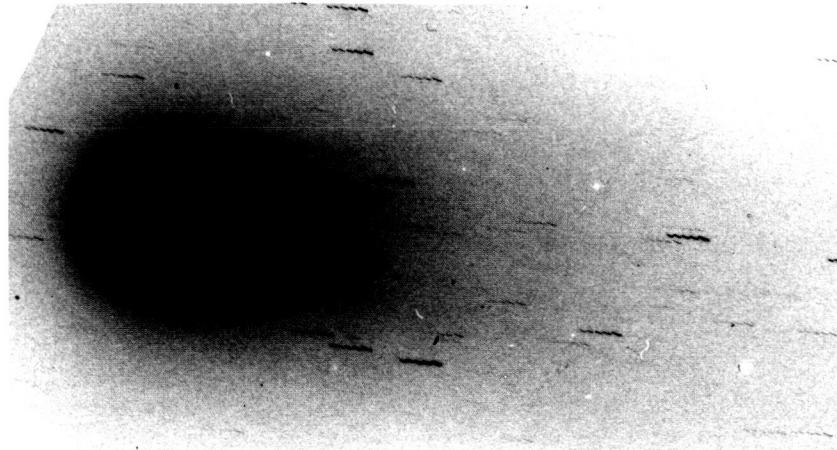


Figure 529-2. 1910 May 26.570; exposure 29 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, S = 1.1 E4

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Figure 530. 1910 May 26.585; exposure 60 minutes; $r = 0.96$, $\Delta = 0.30$, $\theta = 72^\circ$, $\alpha = 89^\circ$, $S = 1.1$ E4



Figure 531d. 1910 May 26.663; exposure 2 minutes;
 $r = 0.96$, $\Delta = 0.30$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.2$ E3
Figure 531c. 1910 May 26.661; exposure 2 minutes;
 $r = 0.96$, $\Delta = 0.30$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.2$ E3
Figure 531b. 1910 May 26.660; exposure 0.50 minute; $r = 0.96$, $\Delta = 0.30$, $\theta = 0.96$, $\Delta = 0.30$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.1$ E3
Figure 531a. 1910 May 26.660; exposure 0.16 minute; $r = 0.96$, $\Delta = 0.30$, $\theta = 0.96$, $\Delta = 0.30$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.1$ E3

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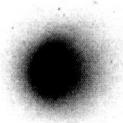


Figure 532. 1910 May 26.681; exposure 1 minute; $r = 0.96$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.4$ E3

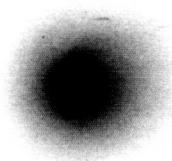


Figure 533-1. 1910 May 26.684; exposure 5 minutes; $r = 0.96$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.4$ E3

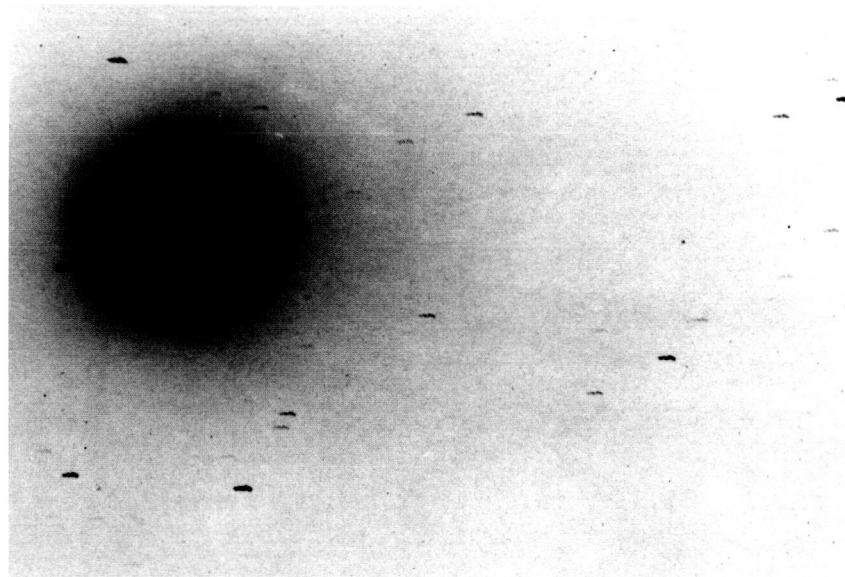


Figure 533-2. 1910 May 26.684; exposure 5 minutes; $r = 0.96$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.4$ E3

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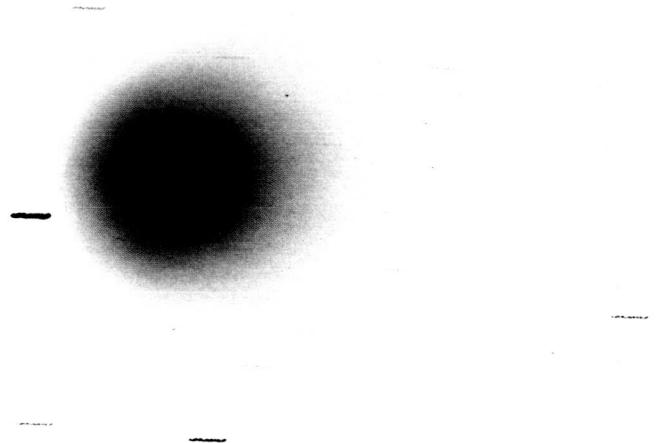


Figure 534-1. 1910 May 26.691; exposure 10 minutes; $r = 0.96$,
 $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, S = 4.4 E3

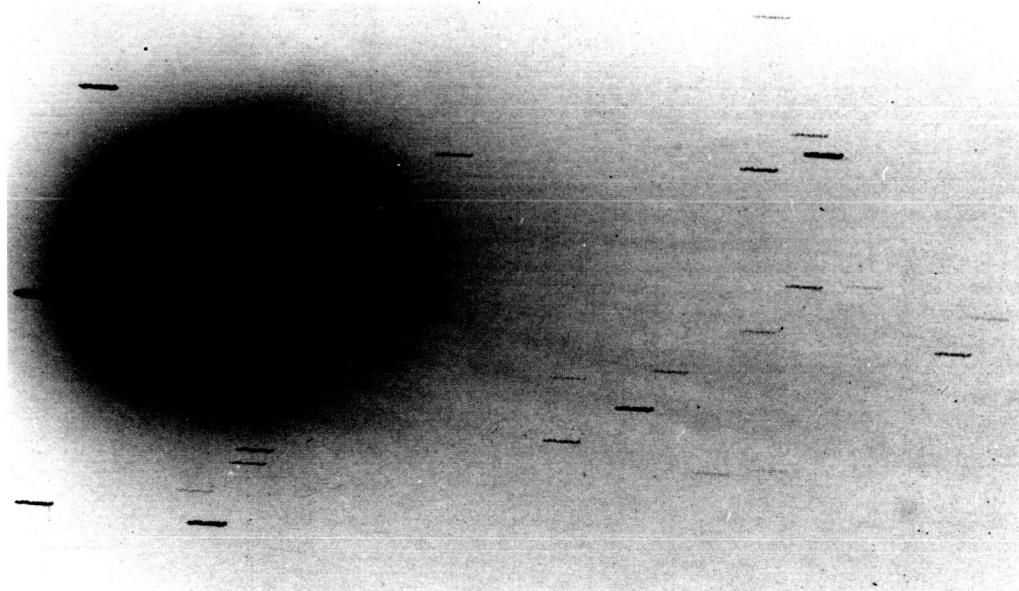


Figure 534-2. 1910 May 26.691; exposure 10 minutes; $r = 0.96$, $\Delta = 0.31$, $\theta = 73^\circ$,
 $\alpha = 89^\circ$, S = 4.4 E3

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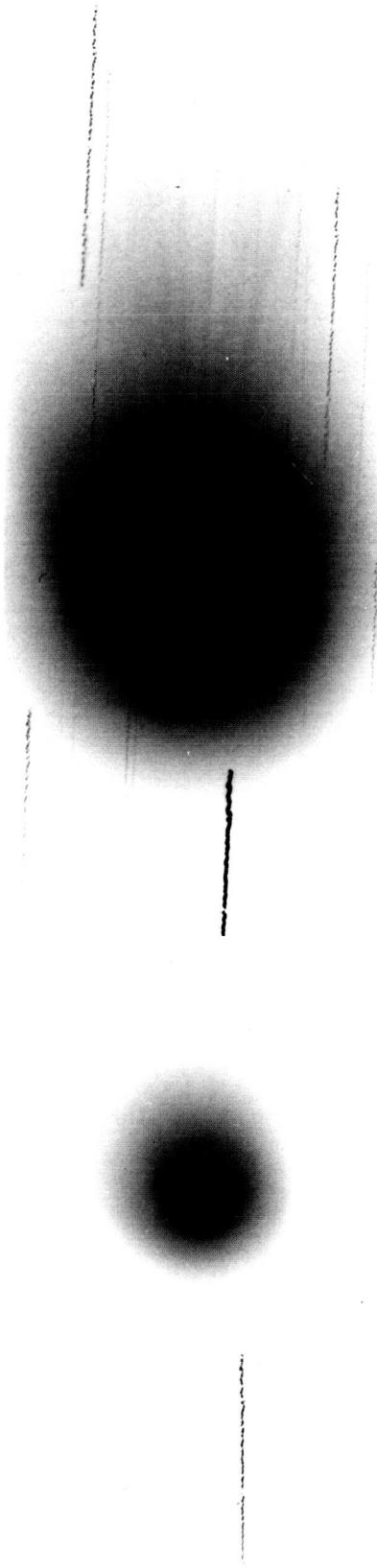


Figure 535-1. 1910 May 26.726; exposure 82 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.4$ E3

Figure 535-2. 1910 May 26.726; exposure 82 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.4$ E3



Figure 535-3. 1910 May 26.726; exposure 82 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 89^\circ$, $S = 4.4$ E3

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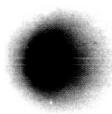


Figure 536-1. 1910 May 26.762; exposure 10 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 88^\circ$, $S = 4.4 \text{ E}3$

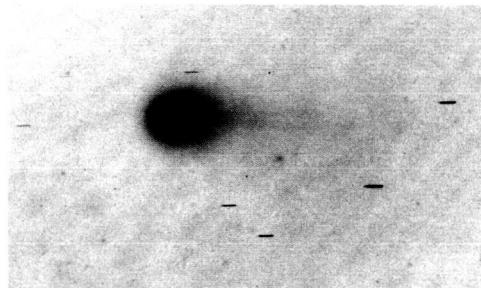


Figure 537. 1910 May 27.169; exposure 35 minutes; $r = 0.97$, $\Delta = 0.32$, $\theta = 74^\circ$, $\alpha = 87^\circ$, $S = 2.8 \text{ E}4$

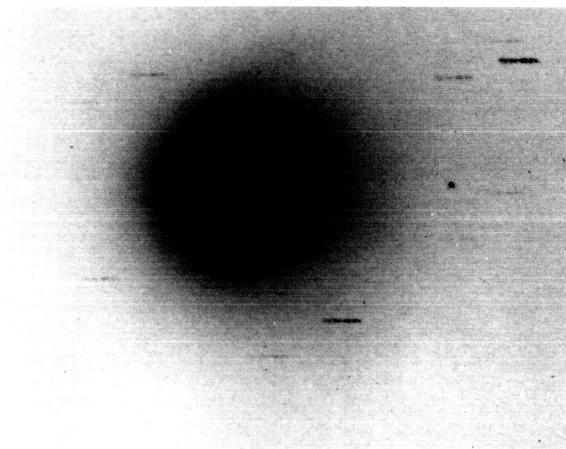


Figure 536-2. 1910 May 26.762; exposure 10 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 88^\circ$, $S = 4.4 \text{ E}3$



Figure 536-3. 1910 May 26.762; exposure 10 minutes; $r = 0.97$, $\Delta = 0.31$, $\theta = 73^\circ$, $\alpha = 88^\circ$, $S = 4.4 \text{ E}3$

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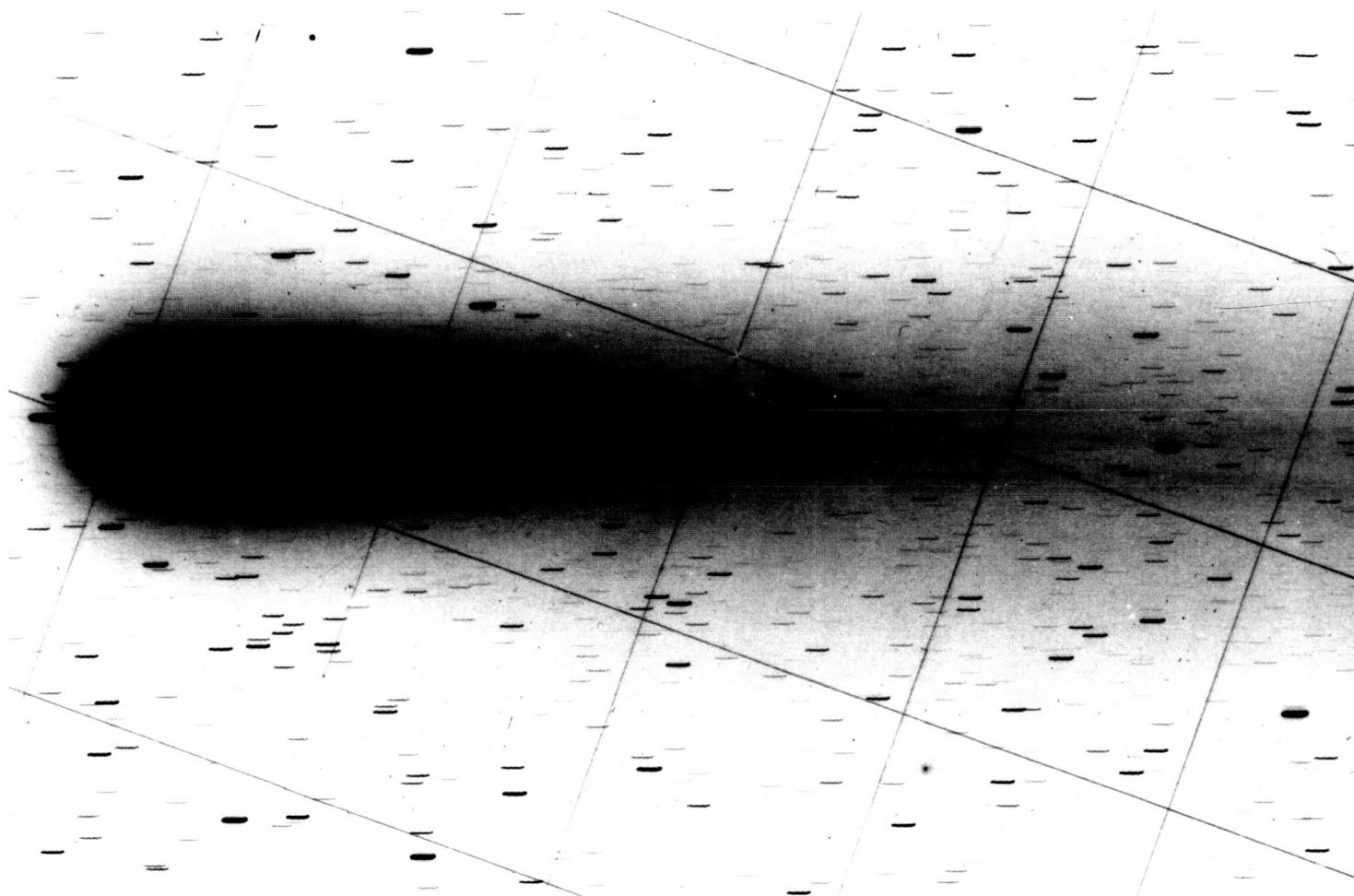


Figure 538. 1910 May 27.262; exposure 40 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, $S = 2.2 \text{ E}4$

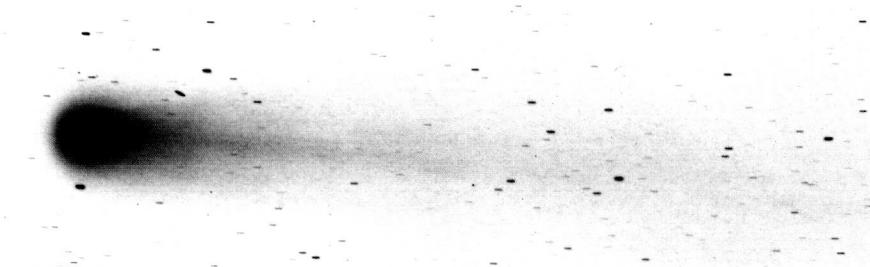


Figure 539-1. 1910 May 27.442; exposure 20 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 85^\circ$, $S = 3.9 \text{ E}4$

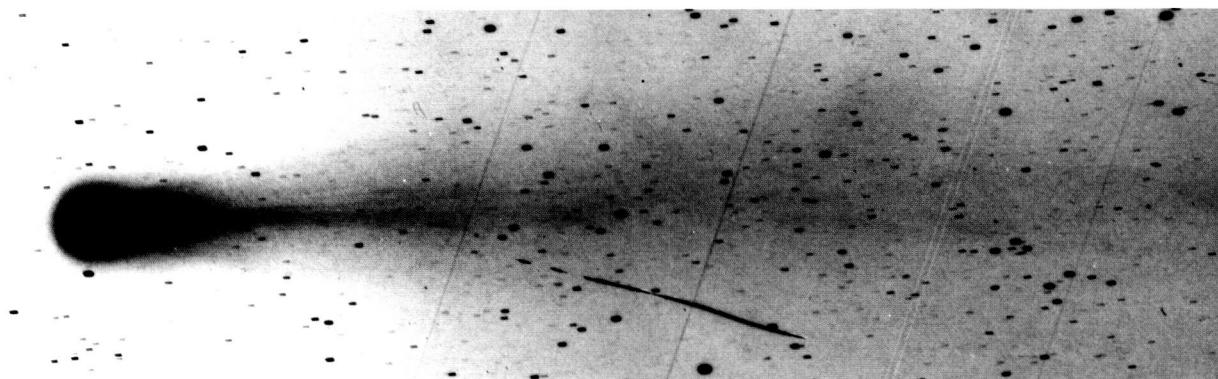
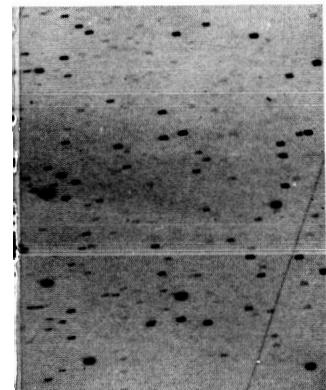
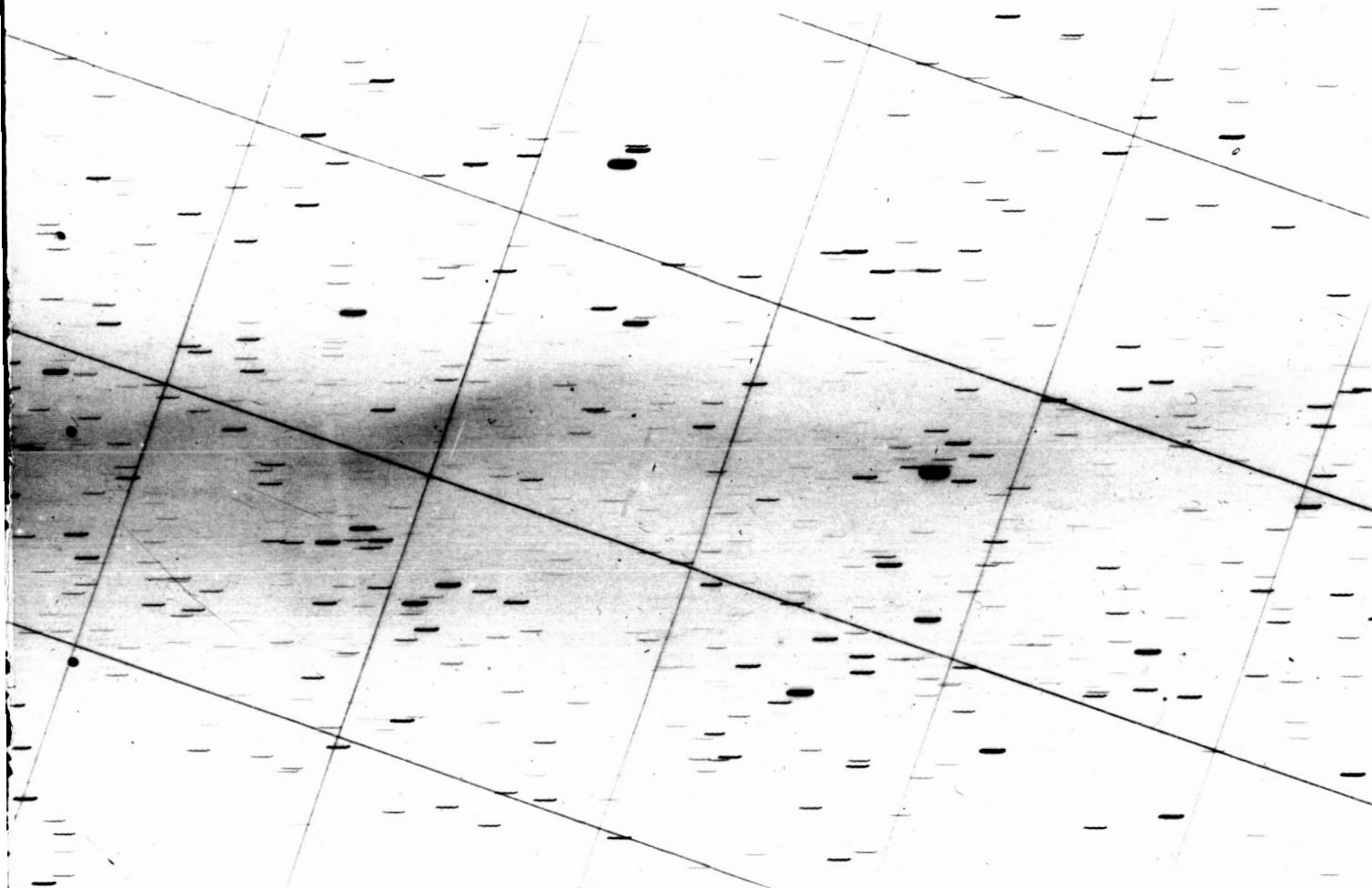


Figure 539-2. 1910 May 27.442; exposure 20 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 85^\circ$, $S = 3.$

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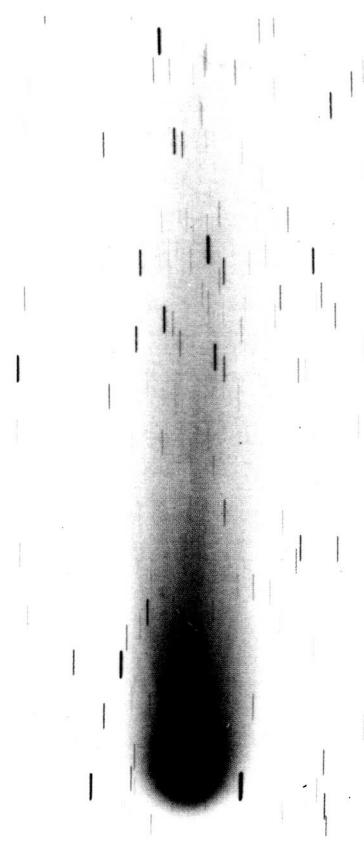


Figure 540-1. 1910 May 27.478; exposure 75 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 85^\circ$, $S = 4.0$ E4

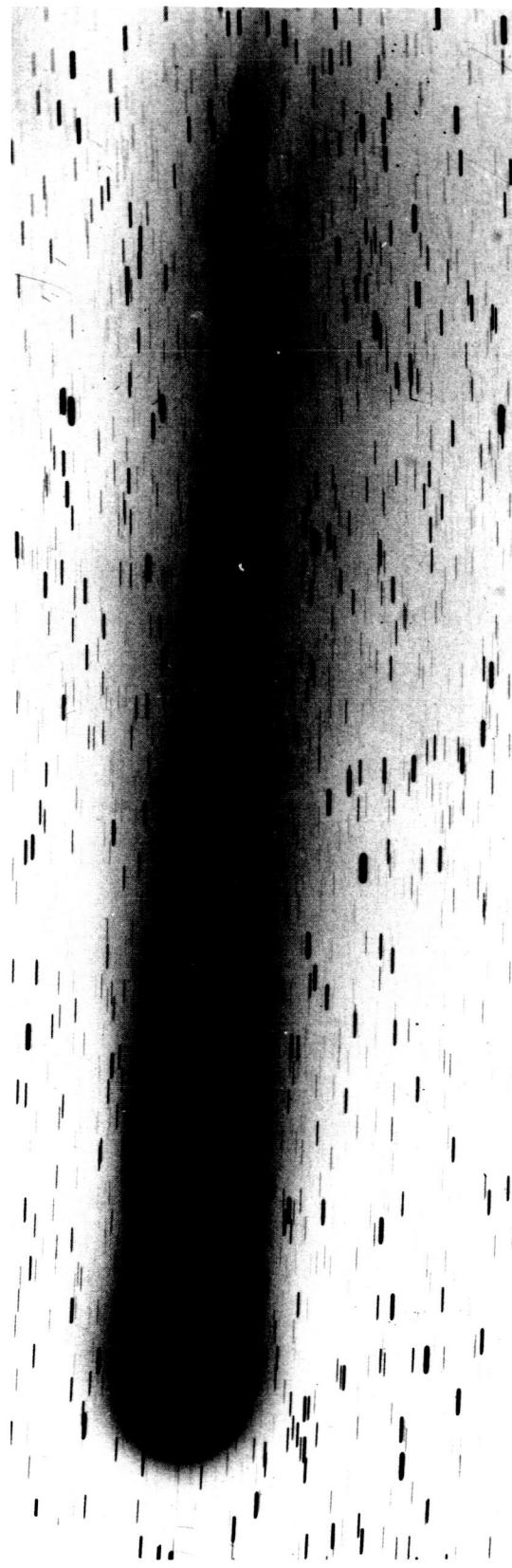


Figure 540-2. 1910 May 27.478; exposure 75 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 740$, $\alpha = 85^\circ$, $S = 4.0$ E4

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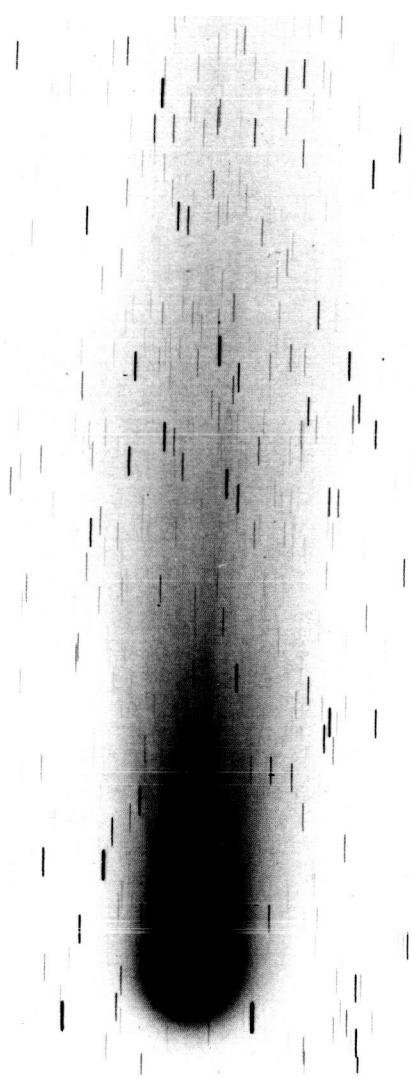


Figure 541-1. 1910 May 27.507; exposure 60 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 3.4$ E4

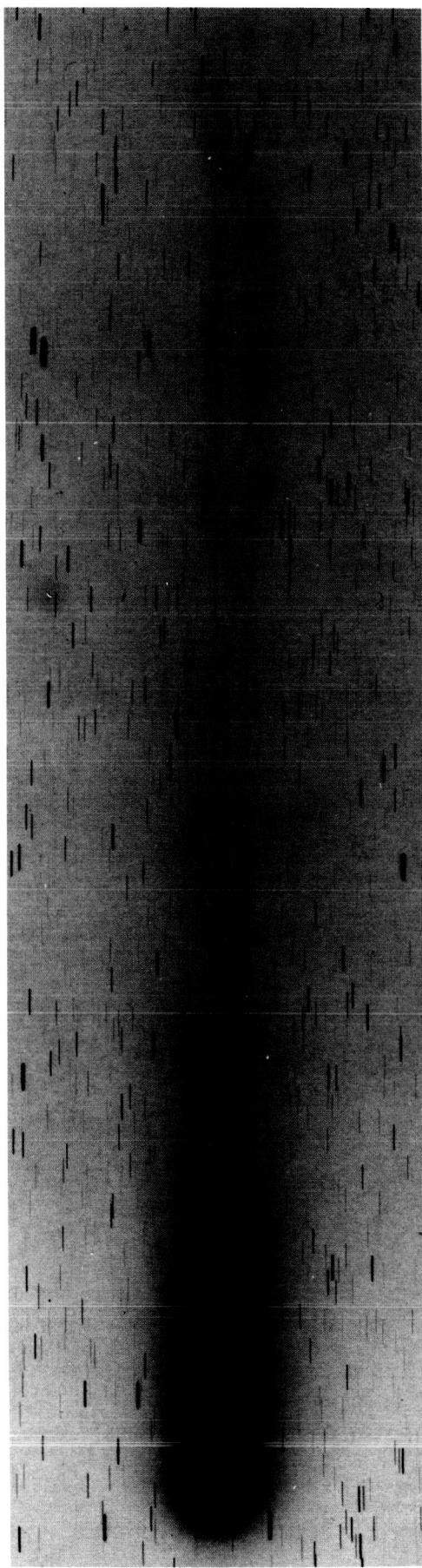


Figure 541-2. 1910 May 27.507; exposure 60 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 3.4$ E4

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Figure 542-1. 1910 May 27.512; exposure 15 minutes; $r = 0.98$, $\Delta = 0.34$,
 $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 4.0 \text{ E}4$

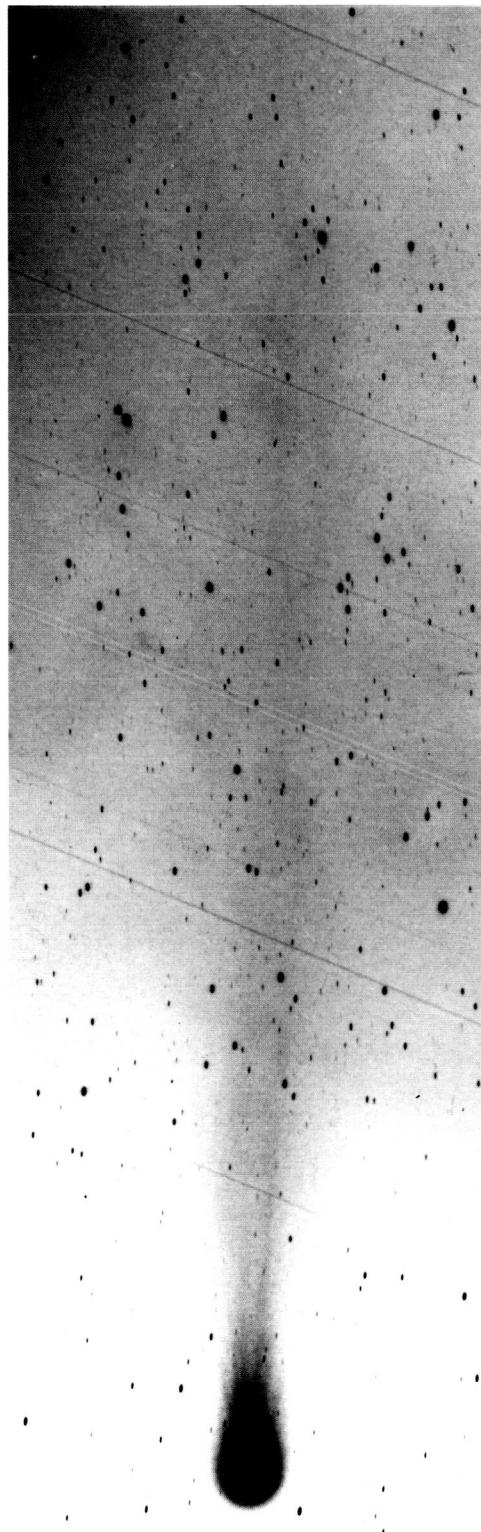


Figure 542-2. 1910 May 27.512; exposure 15 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 4.0 \text{ E}4$

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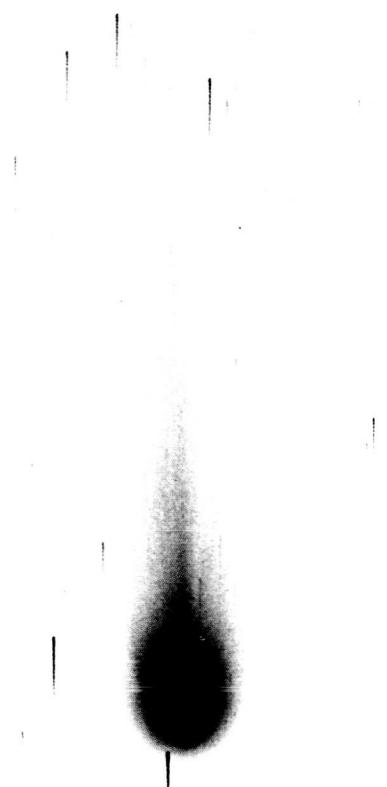


Figure 543-1. 1910 May 27.645; exposure 117 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 2.3 \text{ E}4$

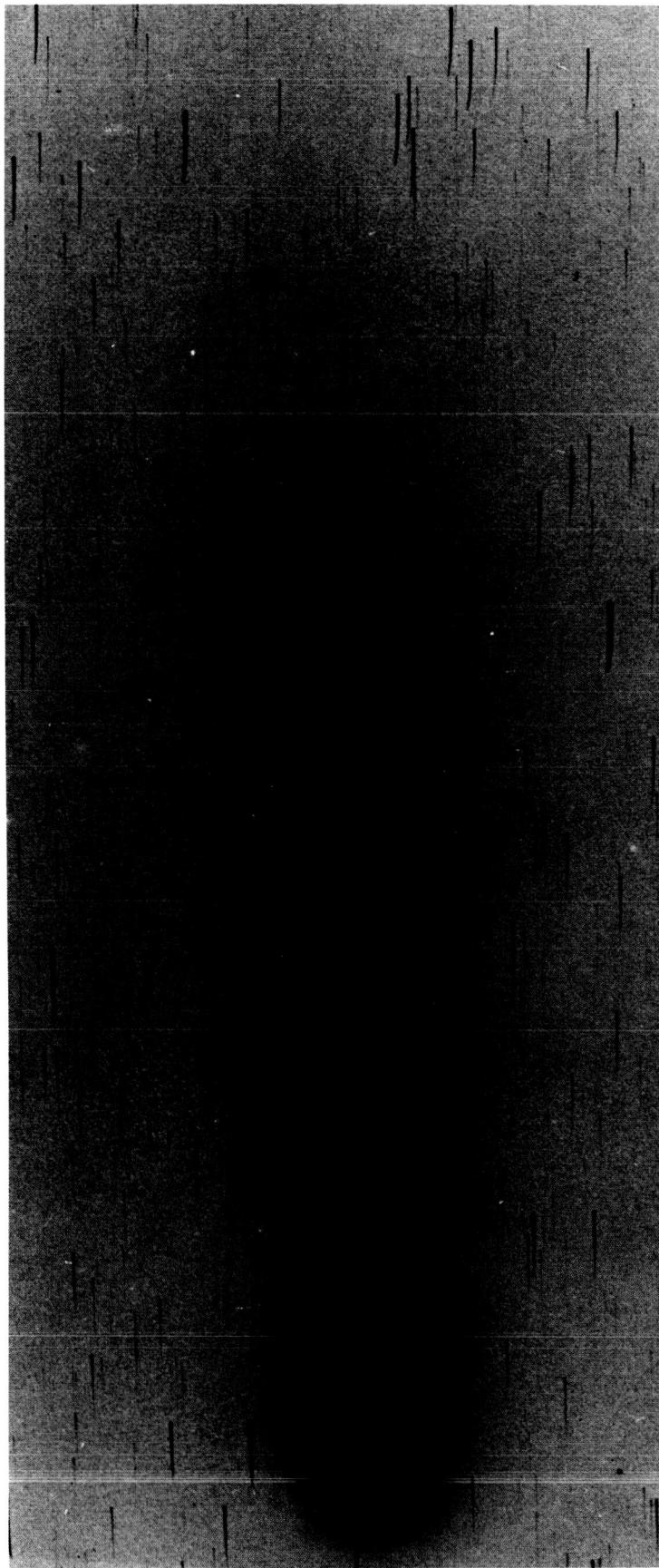


Figure 543-2. 1910 May 27.645; exposure 117 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 2.3 \text{ E}4$

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Figure 544-1. 1910 May 27.645; exposure 117 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 2.0$ E4

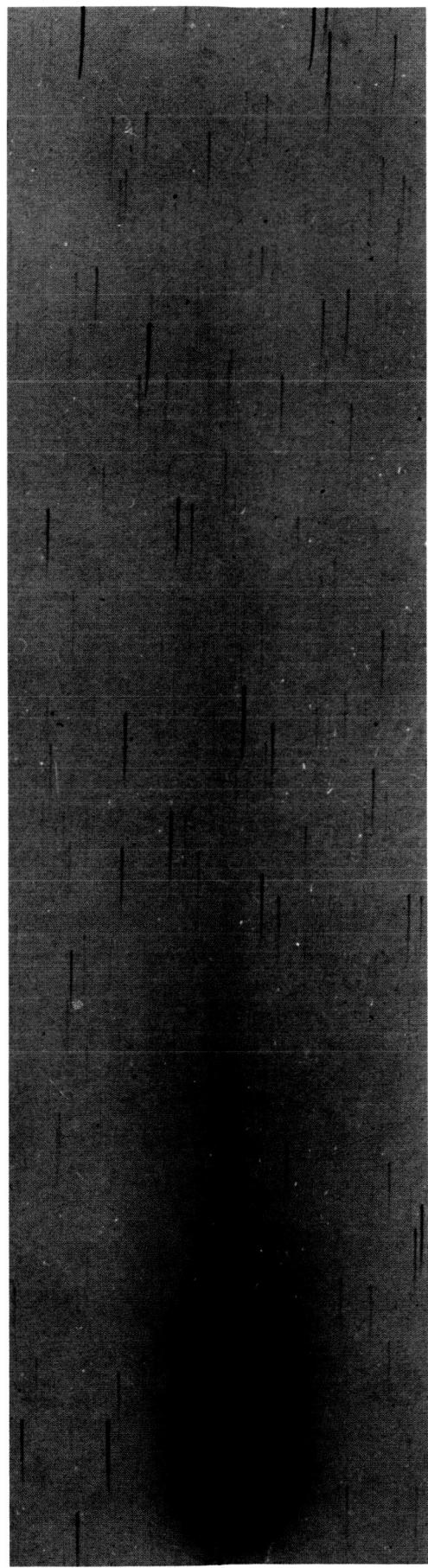


Figure 544-2. 1910 May 27.645; exposure 117 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 2.0$ E4

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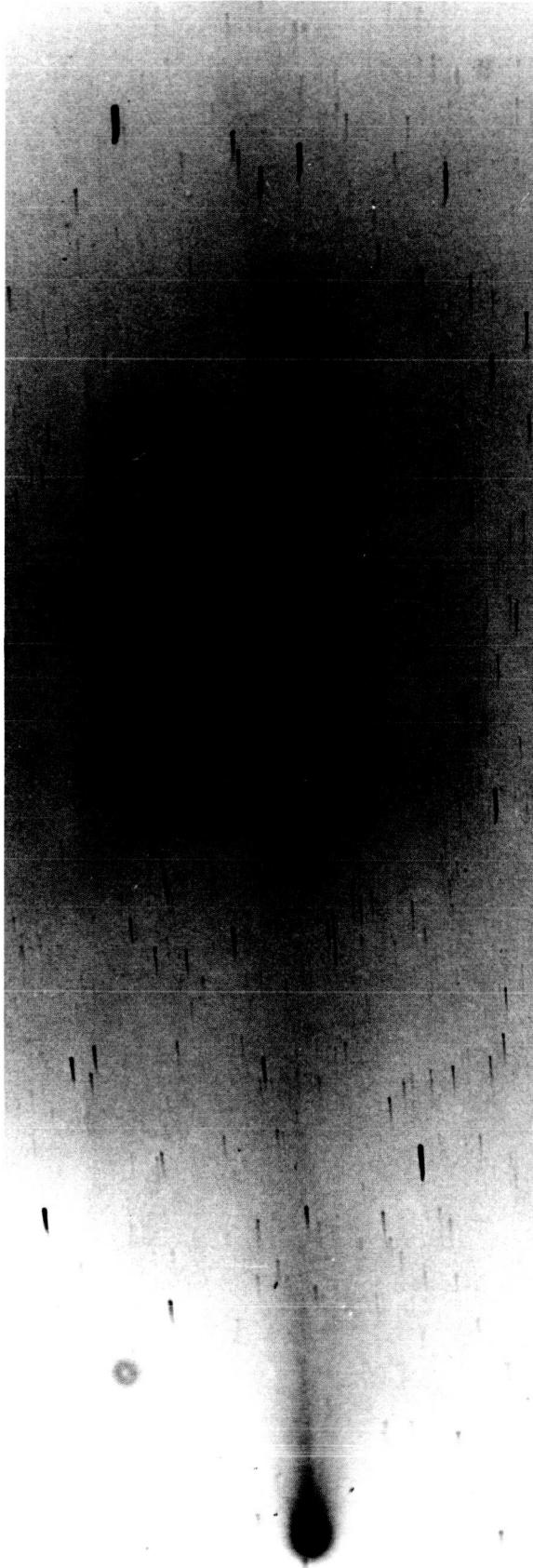


Figure 545. 1910 May 27.649; exposure 129 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 5.2$ E4

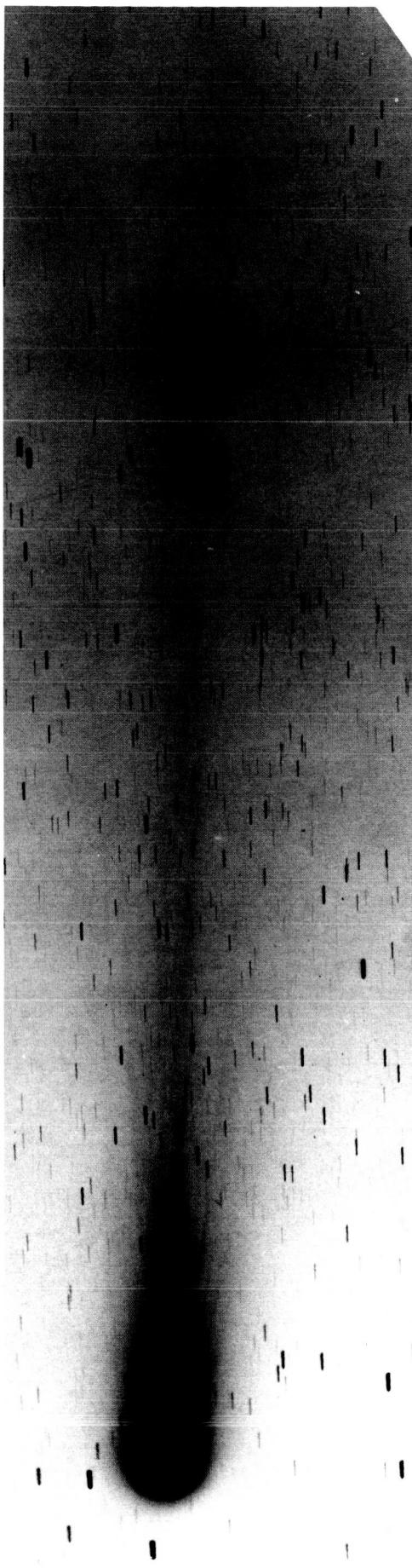


Figure 546. 1910 May 27.727; exposure 50 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 3.3$ E4

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Figure 547-1. 1910 May 27.745; exposure 118 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.0$ E4



Figure 547-2. 1910 May 27.745; exposure 118 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.0$ E4

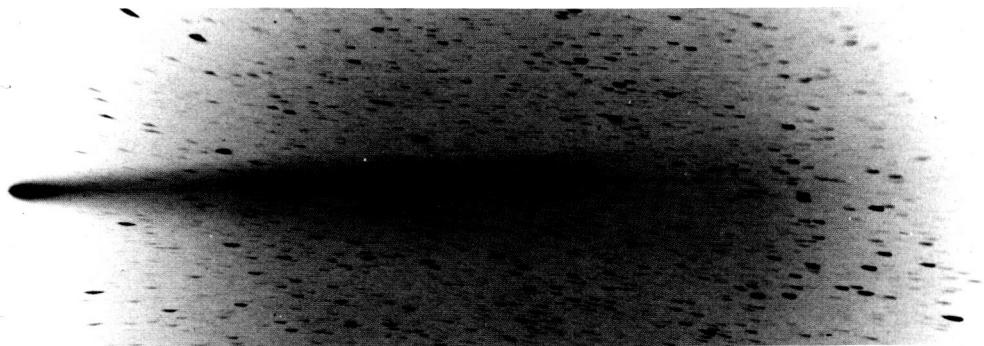
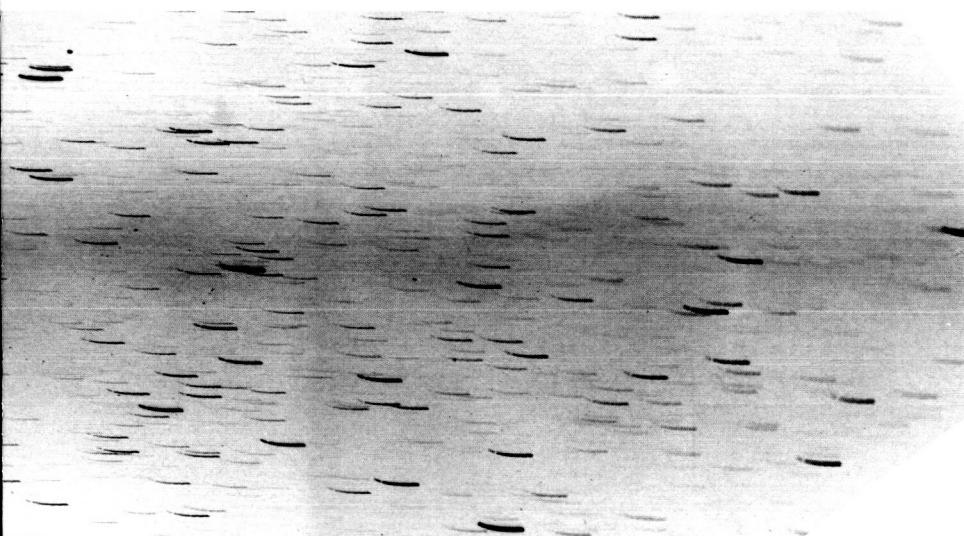


Figure 548. 1910 May 27.745; exposure 118 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 2.0$ E5

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$75^\circ, \alpha = 84^\circ, S = 4.0 \text{ E}4$

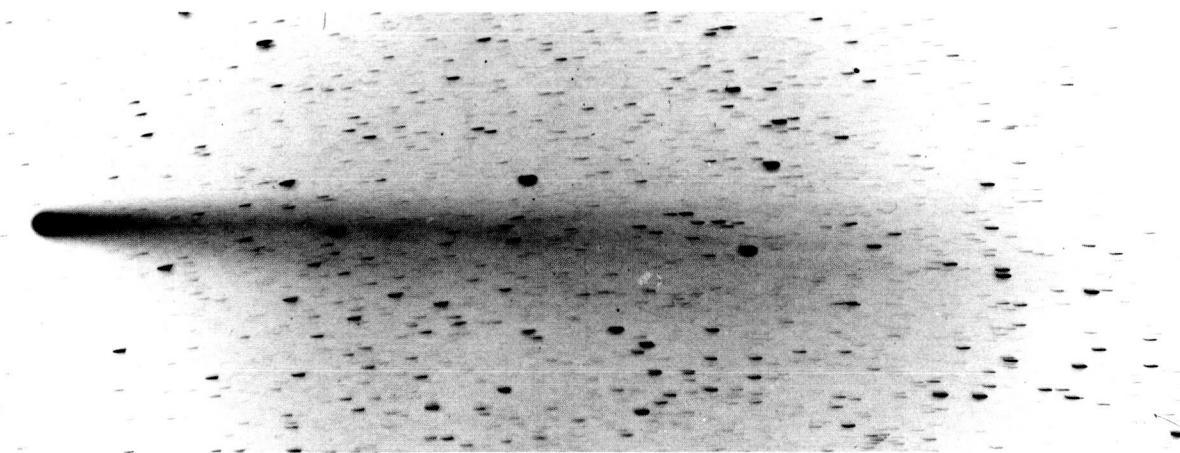


Figure 549. 1910 May 27.745; exposure 118 minutes; $r = 0.98, \Delta = 0.34, \theta = 75^\circ, \alpha = 84^\circ, S = 1.7 \text{ E}5$

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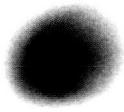


Figure 550-1. 1910 May 27.250; exposure 2 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, $S = 7.2 \text{ E}3$

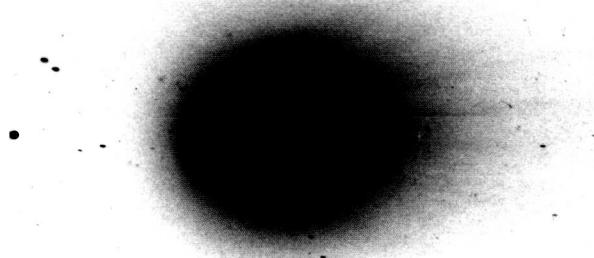


Figure 550-2. 1910 May 27.250; exposure 2 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, $S = 7.2 \text{ E}3$

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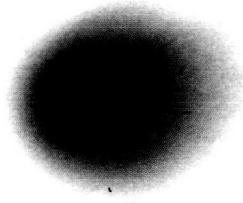


Figure 551-1. 1910 May 27.278; exposure 10 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, $S = 7.2 \text{ E}3$

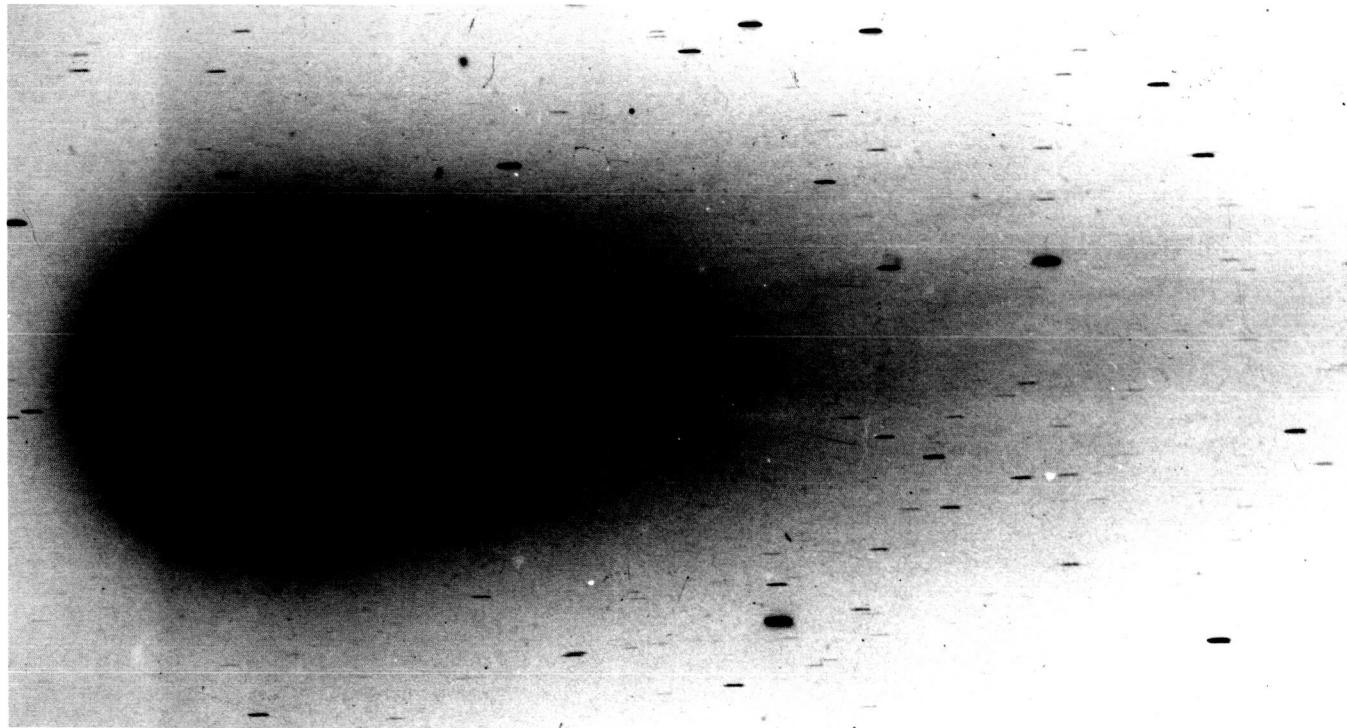


Figure 551-2. 1910 May 27.278; exposure 10 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, $S = 7.2 \text{ E}3$

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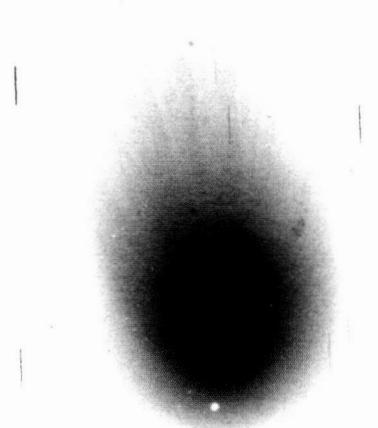


Figure 552-1. 1910 May 27.278; exposure 20 minutes; $r = 0.97$,
 $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, $S = 7.2$ E3

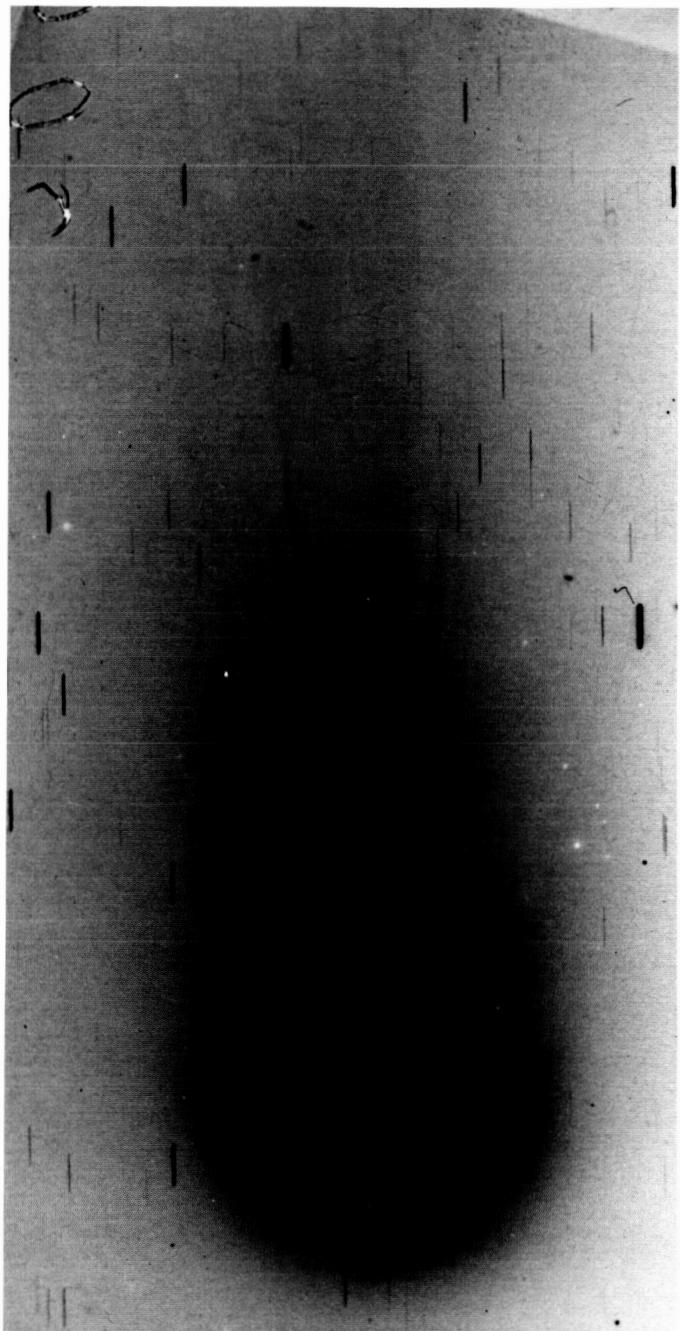


Figure 552-2. 1910 May 27.278; exposure 20 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, $S = 7.2$ E3

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Figure 553-1. 1910 May 27.305; exposure 10 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, $S = 7.2 \text{ E}3$

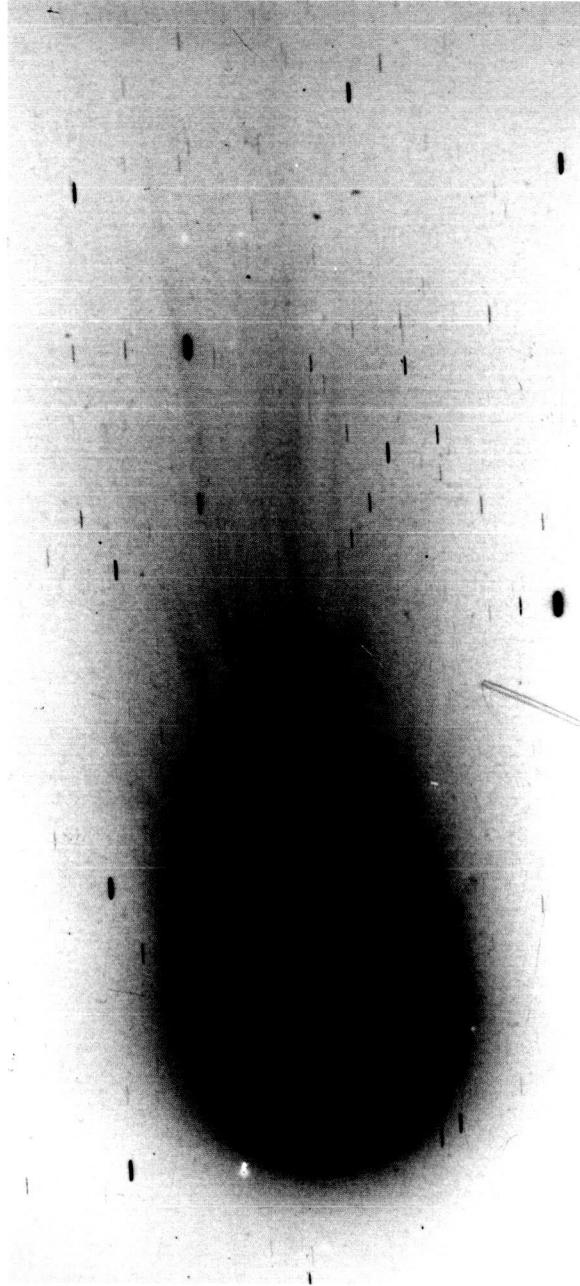


Figure 553-2. 1910 May 27.305; exposure 20 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, $S = 7.2 \text{ E}3$

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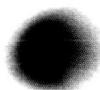


Figure 554-1. 1910 May 27.312; exposure 2 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, S = 7.2 E3

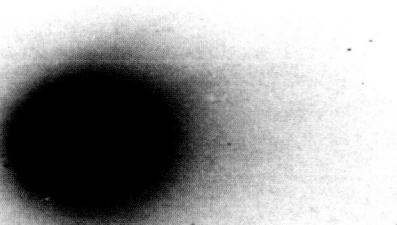


Figure 554-2. 1910 May 27.312; exposure 2 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, S = 7.2 E3

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Figure 555-1. 1910 May 27.332; exposure 3 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, S = 7.2 E3

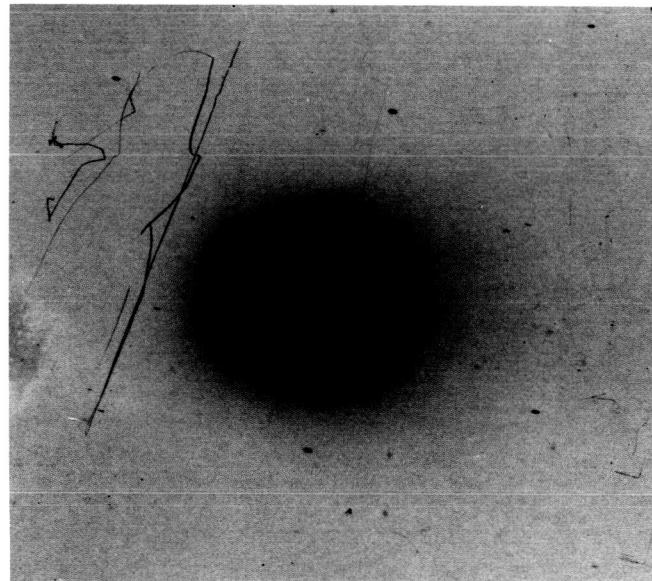


Figure 555-2. 1910 May 27.332; exposure 3 minutes; $r = 0.97$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 86^\circ$, S = 7.2 E3

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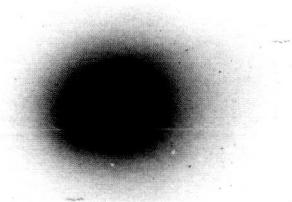


Figure 556-1. 1910 May 27.435; exposure
10 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 74^\circ$,
 $\alpha = 85^\circ$, $S = 7.3$ E3

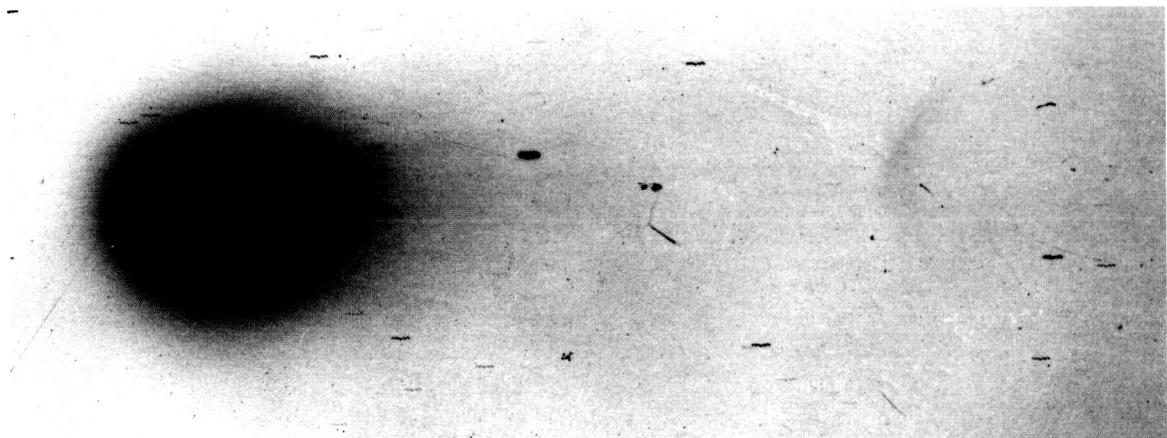


Figure 556-2. 1910 May 27.435; exposure 10 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 85^\circ$, $S = 7.3$ E3

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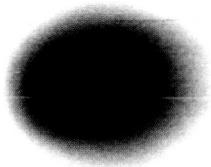


Figure 557-1. 1910 May 27.467; exposure 60 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 85^\circ$, $S = 7.4$ E3



Figure 557-2. 1910 May 27.467; exposure 60 minutes; $R = 0.98$, $\Delta = 0.33$, $\theta = 74^\circ$, $\alpha = 85^\circ$, $S = 7.4$ E3

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Figure 559-1. 1910 May 27.513; exposure
30 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$,
 $\alpha = 85^\circ$, $S = 7.4$ E3

Figure 558a. 1910 May 27.798; exposure
3 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 75^\circ$,
 $\alpha = 85^\circ$, $S = 7.4$ E3

Figure 558b. 1910 May 27.494; exposure
5 minutes; $r = 0.98$, $\Delta = 0.33$, $\theta = 74^\circ$,
 $\alpha = 85^\circ$, $S = 7.4$ E3

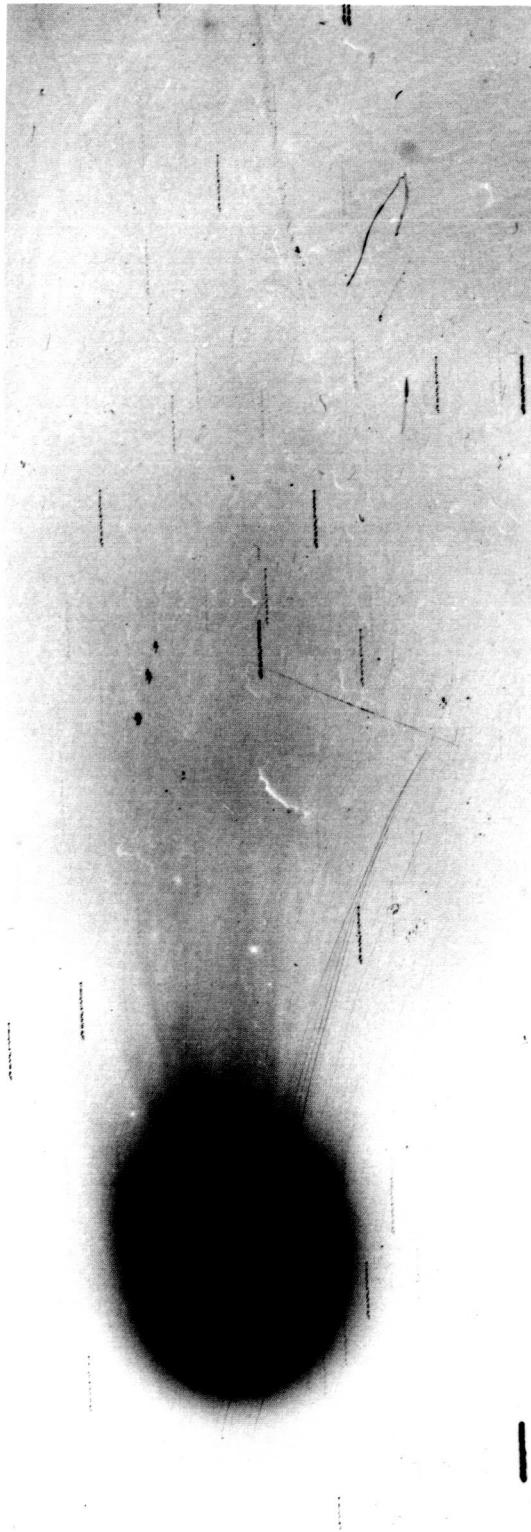


Figure 559-2. 1910 May 27.513; exposure 30 minutes; $r = 0.98$, $\Sigma = 0.34$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 7.4$ E3

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Figure 560a. 1910 May 27.537; exposure 5 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 7.4 \text{ E}3$

Figure 560b. 1910 May 27.531; exposure 10 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 85^\circ$, $S = 7.4 \text{ E}3$

Figure 561. 1910 May 27.684; exposure 1 minute; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.9 \text{ E}3$

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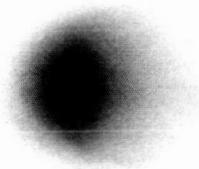


Figure 562-1. 1910 May 27.688; exposure
5 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$,
 $\alpha = 84^\circ$, $S = 4.9$ E3



Figure 562-2. 1910 May 27.688; exposure 5 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$,
 $\alpha = 84^\circ$, $S = 4.9$ E3

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Figure 563-1. 1910 May 27.695;
exposure 14 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.9$ E3

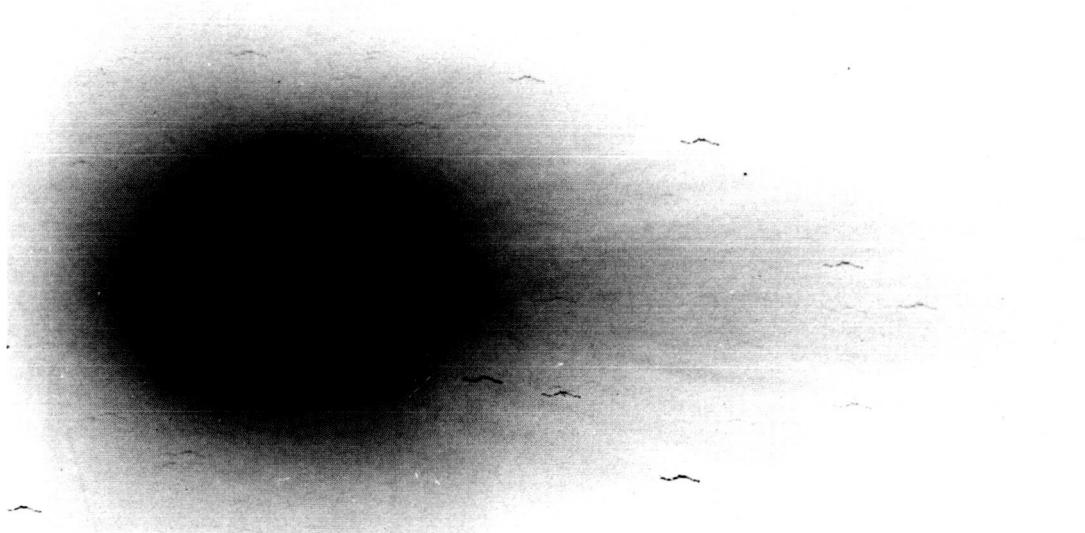


Figure 563-2. 1910 May 27.695; exposure 14 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.9$ E3

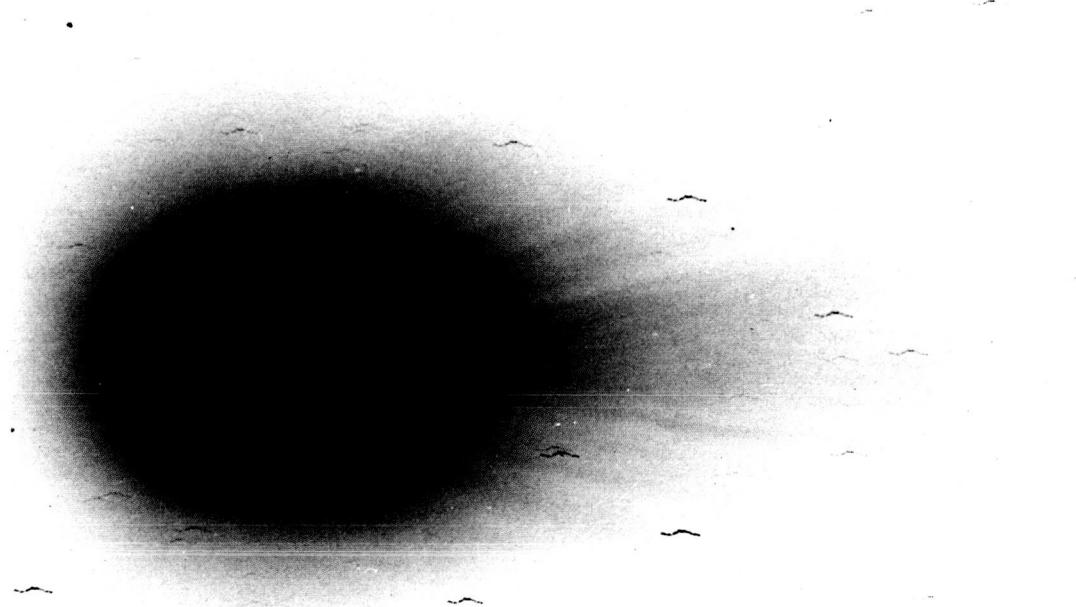


Figure 563-3. 1910 May 27.695; exposure 14 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.9$ E3

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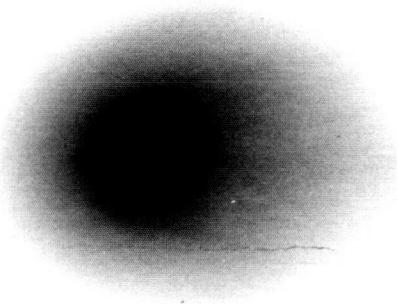


Figure 564-1. 1910 May 27.739; exposure 100 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.9$ E3



Figure 564-2. 1910 May 27.739; exposure 100 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.9$ E3



Figure 564-3. 1910 May 27.739; exposure 100 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.9$ E3

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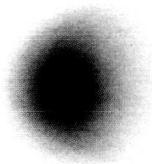


Figure 565-1. 1910 May 27.782; exposure 12 minutes; $r = 0.98$, $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.9 E3$

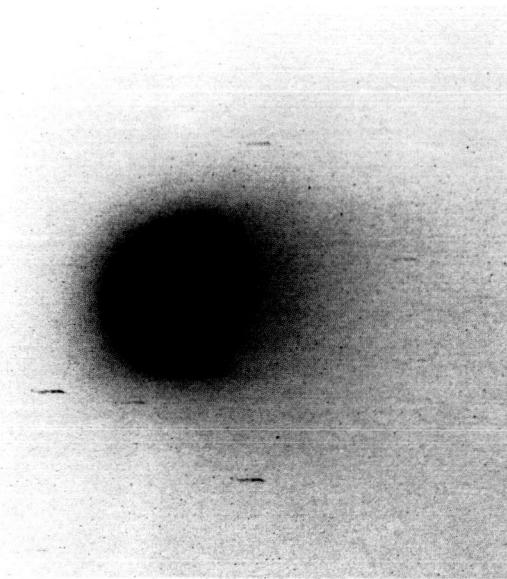


Figure 565-2. 1910 May 27.782; exposure 12 minutes; $r = 0.98$; $\Delta = 0.34$, $\theta = 75^\circ$, $\alpha = 84^\circ$, $S = 4.9 E3$

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Figure 566-1. 1910 May 28.445; exposure 16 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$, $\alpha = 82^\circ$, $S = 4.4$ E4



Figure 566-2. 1910 May 28.445; exposure 16 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$, $\alpha = 82^\circ$, $S = 4.4$ E4

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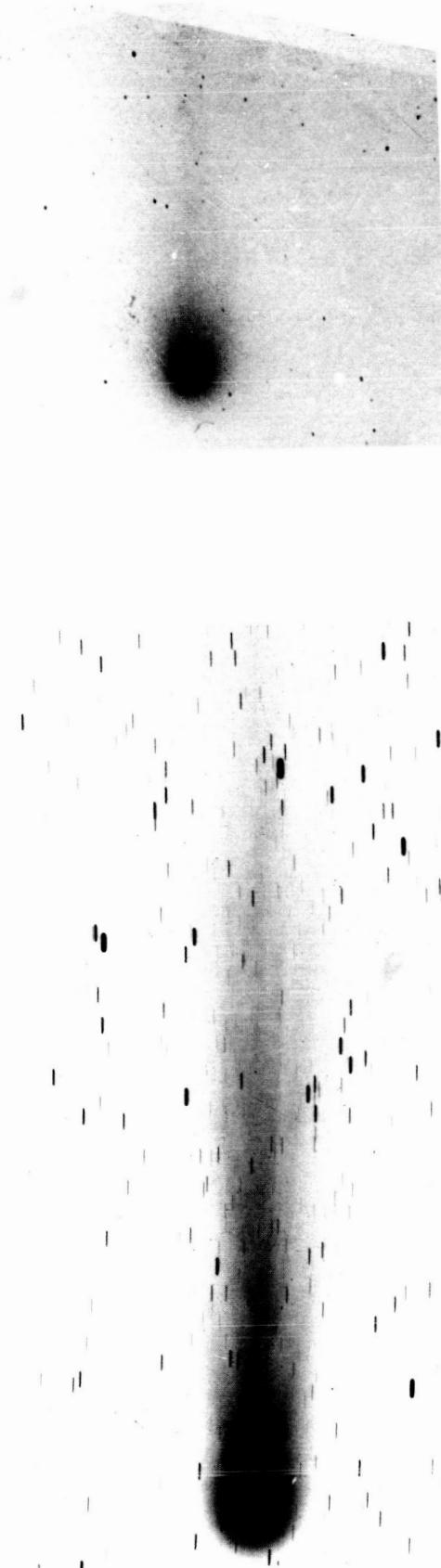


Figure 567-1. 1910 May 28.474; exposure 60 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$,
 $\alpha = 81^\circ$, $S = 4.4 \text{ E}4$



Figure 568. 1910 May 28.602; exposure 5 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$,
 $\alpha = 81^\circ$, $S = 2.8 \text{ E}4$

Figure 567-2. 1910 May 28.474; exposure 60 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$, $\alpha = 81^\circ$, $S = 4.4 \text{ E}4$

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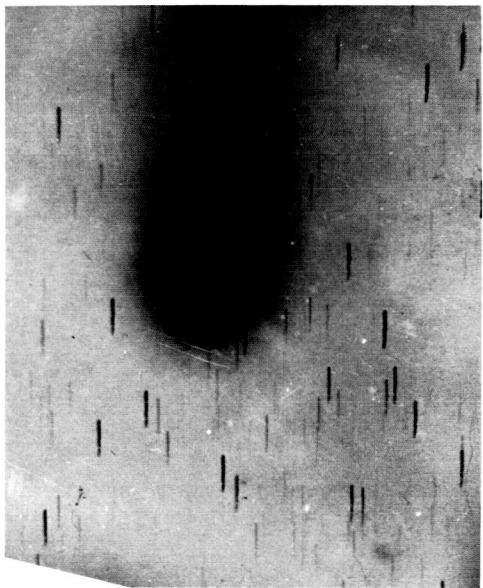


Figure 569. 1910 May 28.635; exposure 90 minutes; $r = 0.99$, $\Delta = 0.38$, $\theta = 76^\circ$, $\alpha = 81^\circ$, $S = 2.8 \text{ E4}$

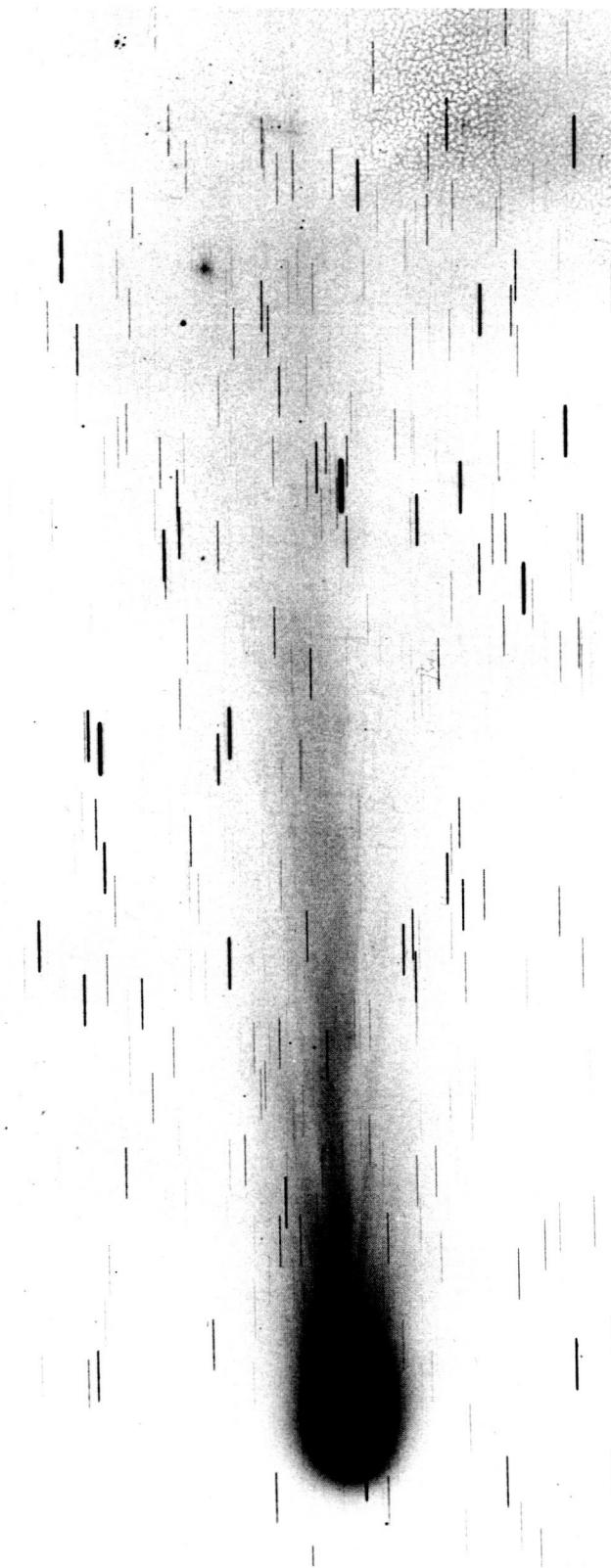


Figure 570. 1910 May 28.692; exposure 45 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 81^\circ$, $S = 3.2 \text{ E4}$

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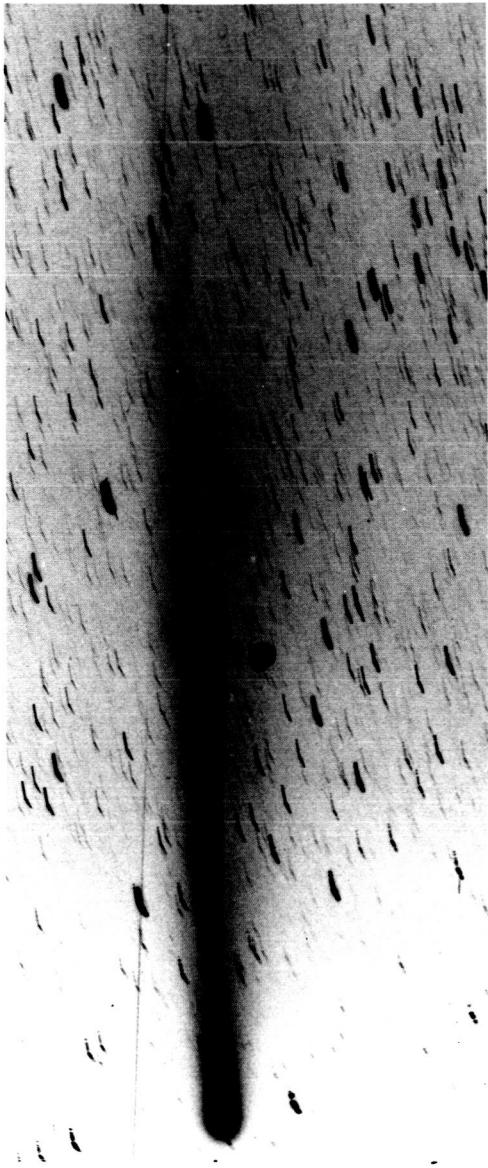


Figure 571. 1910 May 28.719; exposure 128 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 81^\circ$, $S = 1.1 \text{ E}5$

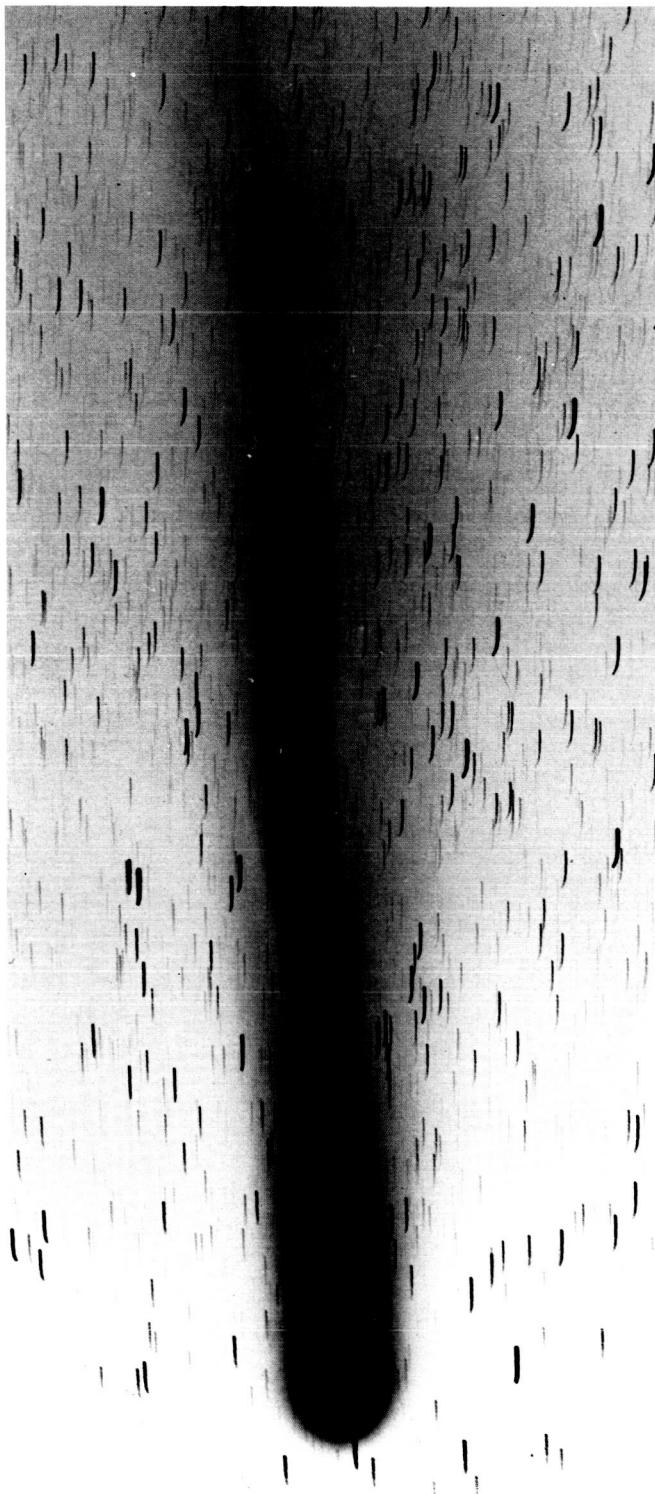


Figure 572. 1910 May 28.751; exposure 124 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 80^\circ$, $S = 4.4 \text{ E}4$

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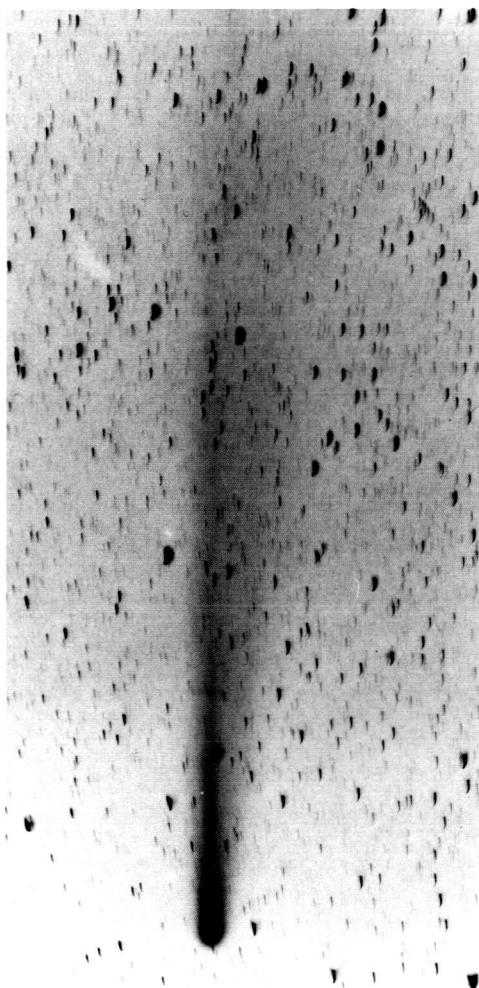


Figure 573. 1910 May 28.754; exposure 132 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$,
 $\alpha = 80^\circ$, $S = 1.9$ E5

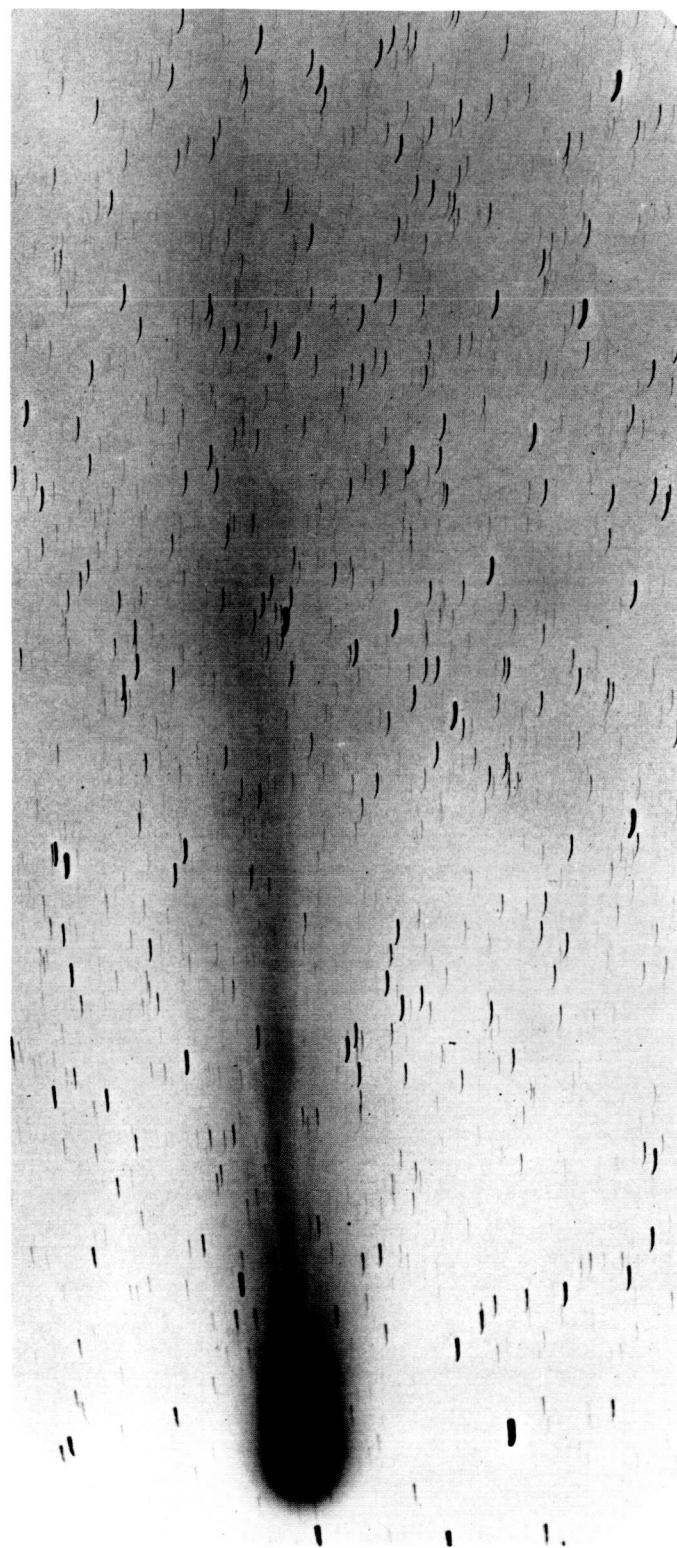


Figure 574. 1910 May 28.768; exposure 73 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 80^\circ$, $S = 3.7$ E4

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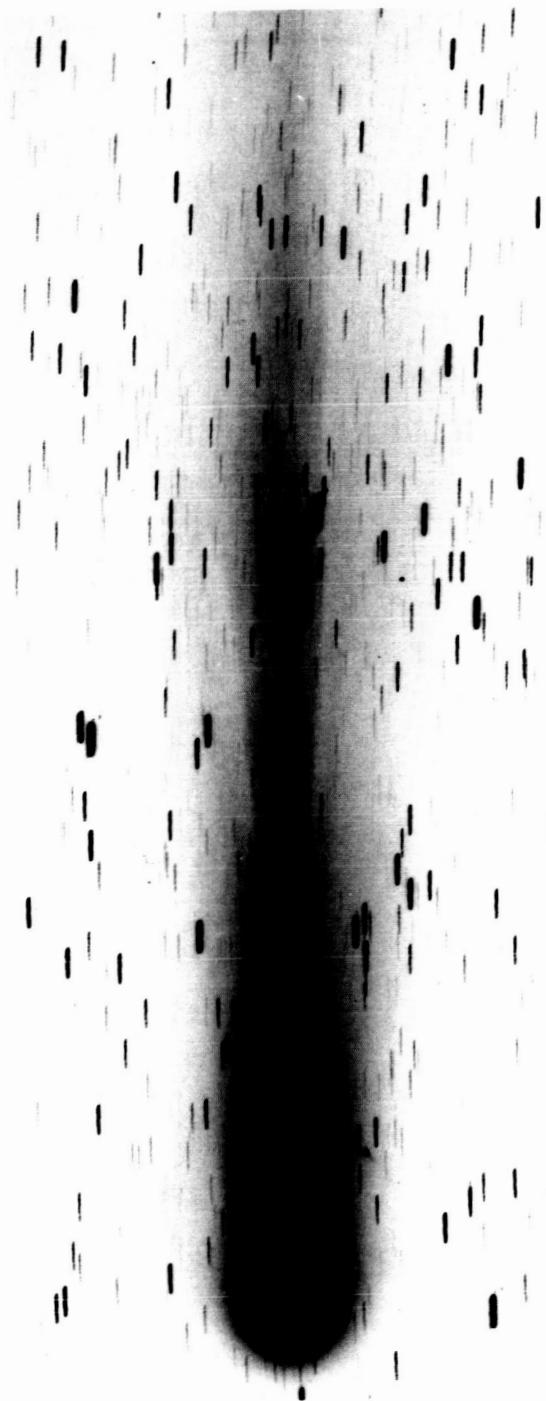


Figure 575. 1910 May 28.814; exposure 93 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 80^\circ$, $S = 3.8 \text{ E}4$

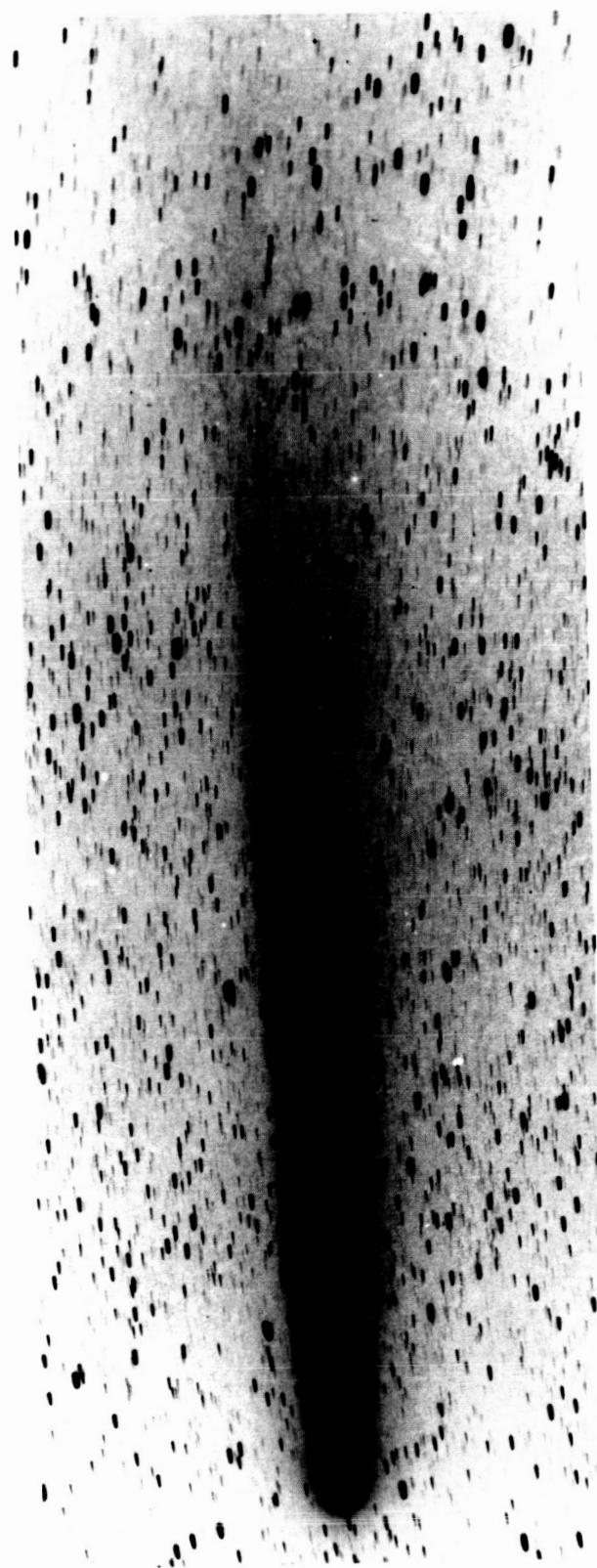


Figure 576. 1910 May 28.829; exposure 136 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 80^\circ$, $S = 8.0 \text{ E}4$

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Figure 577. 1910 May 28.862; exposure 41 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 80^\circ$, $S = 3.6$ E4



Figure 578-1. 1910 May 28.254; exposure 2 minutes; $r = 0.99$, $\Delta = 0.36$, $\theta = 76^\circ$, $\alpha = 82^\circ$, $S = 8.0$ E3

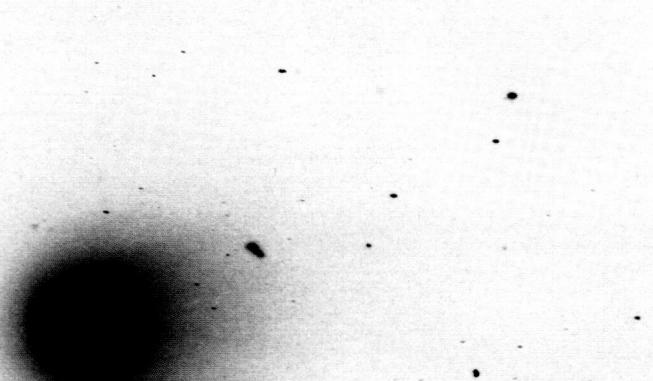


Figure 578-2. 1910 May 28.254; exposure 2 minutes; $r = 0.99$, $\Delta = 0.36$, $\theta = 76^\circ$, $\alpha = 82^\circ$, $S = 8.0$ E3

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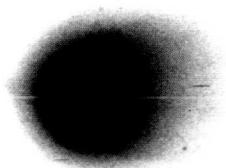


Figure 579-1. 1910 May 28.261; exposure 10 minutes; $r = 0.99$, $\Delta = 0.36$, $\theta = 76^\circ$, $\alpha = 82^\circ$, $S = 8.0 \text{ E}3$

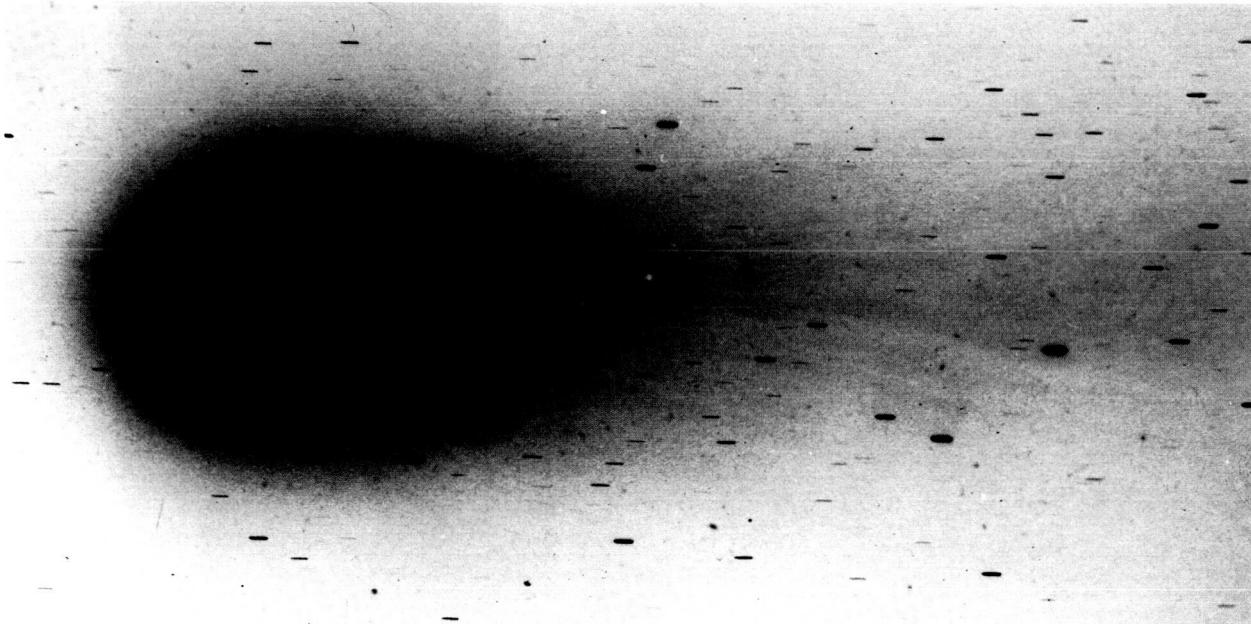


Figure 579-2. 1910 May 28.261; exposure 10 minutes; $r = 0.99$, $\Delta = 0.36$, $\theta = 76^\circ$, $\alpha = 82^\circ$, $S = 8.0 \text{ E}3$

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Figure 580-1. 1910 May 28.309; exposure 2 minutes; $r = 0.99$, $\Delta = 0.36$, $\theta = 76^\circ$, $\alpha = 82^\circ$, $S = 8.0$ E3

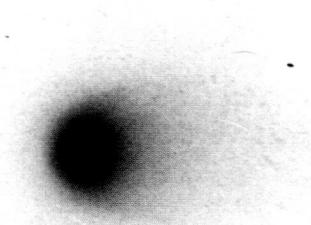


Figure 580-2. 1910 May 28.309; exposure 2 minutes; $r = 0.99$, $\Delta = 0.36$, $\theta = 76^\circ$, $\alpha = 82^\circ$, $S = 8.0$ E3

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Figure 581-1. 1910 May 28.343; exposure 3 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$, $\alpha = 82^\circ$, S = 8.0 E3

Figure 581-2. 1910 May 28.343; exposure 3 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$, $\alpha = 82^\circ$, S = 8.0 E3

Figure 582. 1910 May 28.448; exposure 11 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$, $\alpha = 81^\circ$, S = 8.1 E3

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Figure 583. 1910 May 28.481; exposure 52 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$, $\alpha = 81^\circ$, $S = 8.2 \text{ E}3$

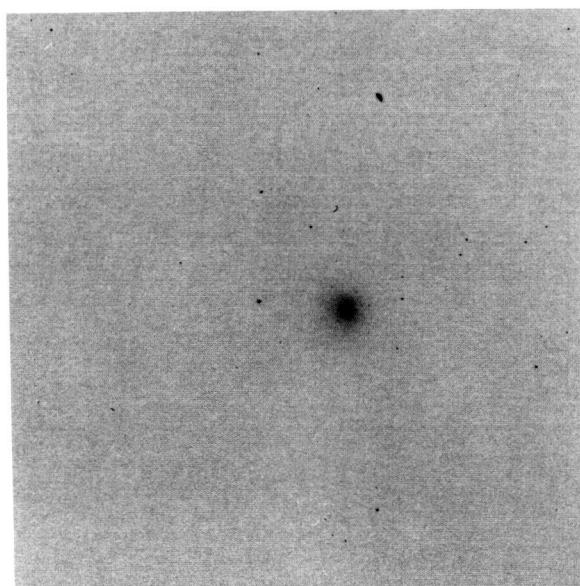


Figure 584. 1910 May 28.573; exposure 11 minutes; $r = 0.99$, $\Delta = 0.37$, $\theta = 76^\circ$, $\alpha = 81^\circ$, $S = 1.3 \text{ E}4$

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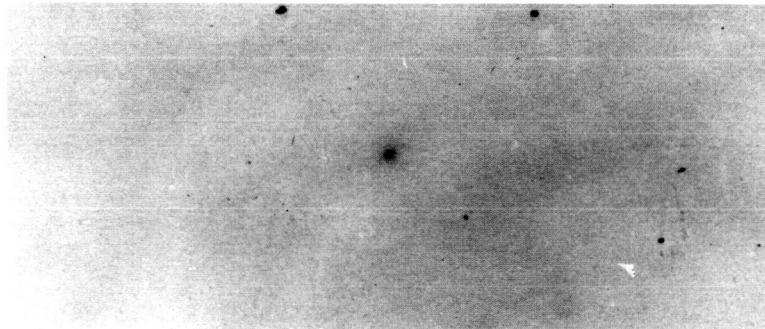


Figure 585a. 1910 May 28.676; exposure 0.50 minute; $r = 1.00$,
 $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 81^\circ$, S = 5.1 E3

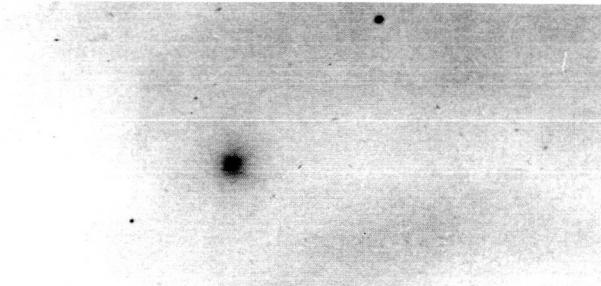


Figure 585b. 1910 May 28.677; exposure 1 minute; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 81^\circ$, S = 5.1 E3

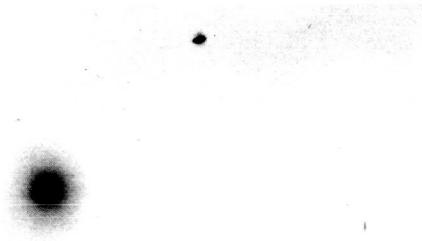


Figure 585c. 1910 May 28.679; exposure 2 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 81^\circ$, S = 5.1 E3

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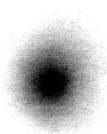


Figure 586-1. 1910 May 28.690; exposure 2 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 81^\circ$, $S = 5.4 \text{ E}3$

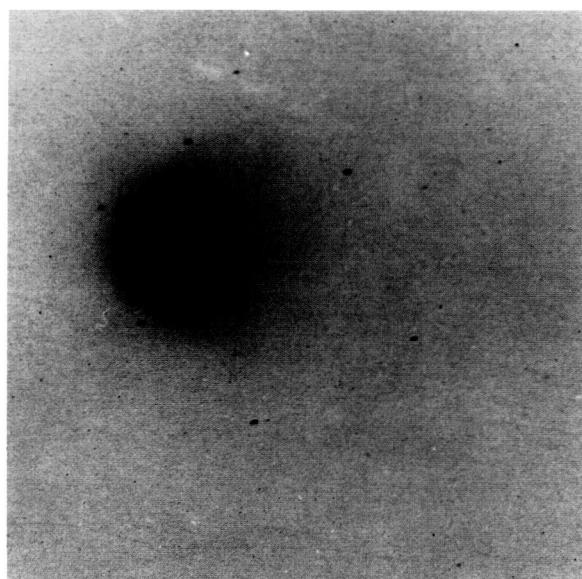


Figure 586-2. 1910 May 28.690; exposure 2 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 81^\circ$, $S = 5.4 \text{ E}3$

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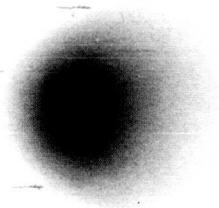


Figure 587-1. 1910 May 28.697; exposure 16 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 81^\circ$, $S = 5.4 \text{ E}3$

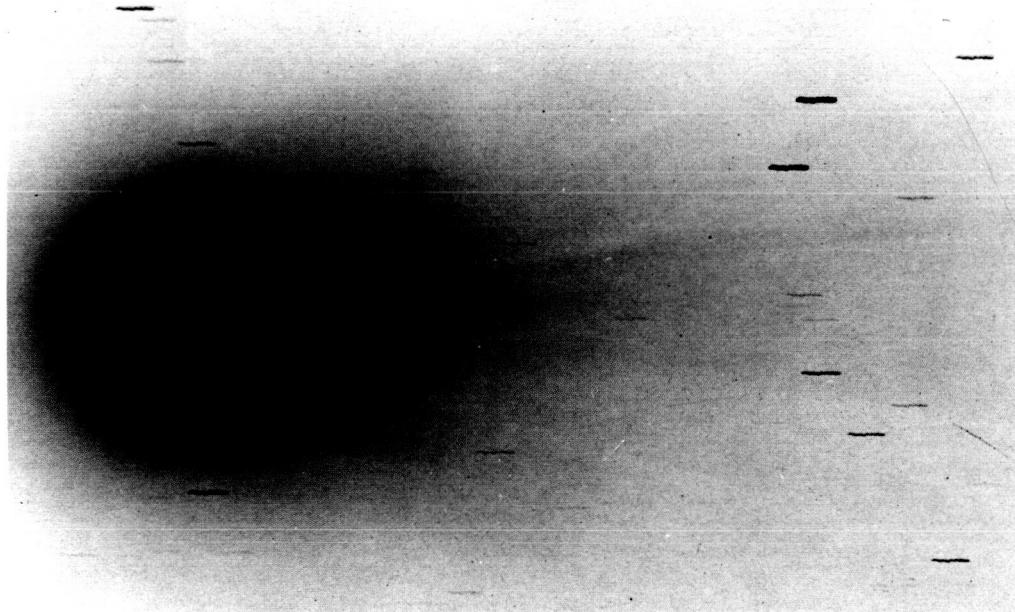


Figure 587-2. 1910 May 28.697; exposure 16 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 81^\circ$, $S = 5.4 \text{ E}3$

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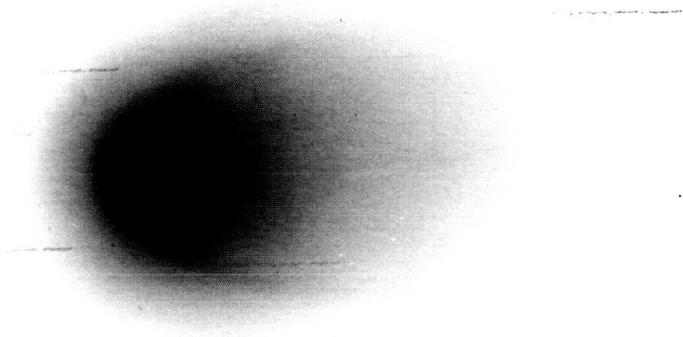


Figure 588-1. 1910 May 28.739; exposure 90 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 80^\circ$, $S = 5.4$ E3

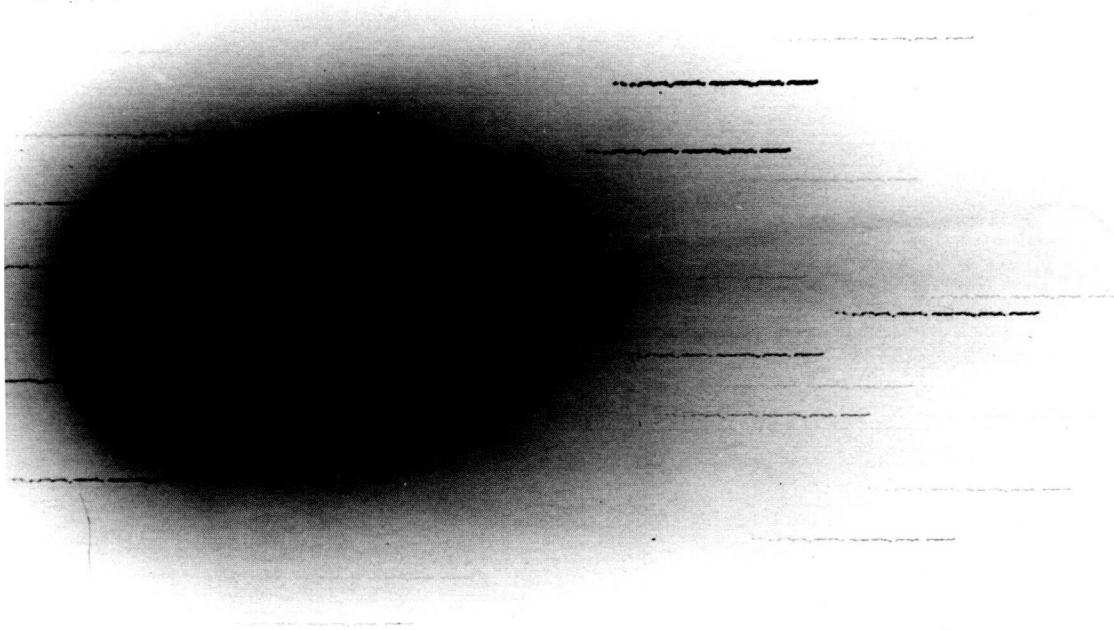


Figure 588-2. 1910 May 28.739; exposure 90 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 80^\circ$, $S = 5.4$ E3

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Figure 589-1. 1910 May 28.782; exposure 33 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 80^\circ$, S = 5.5 E3

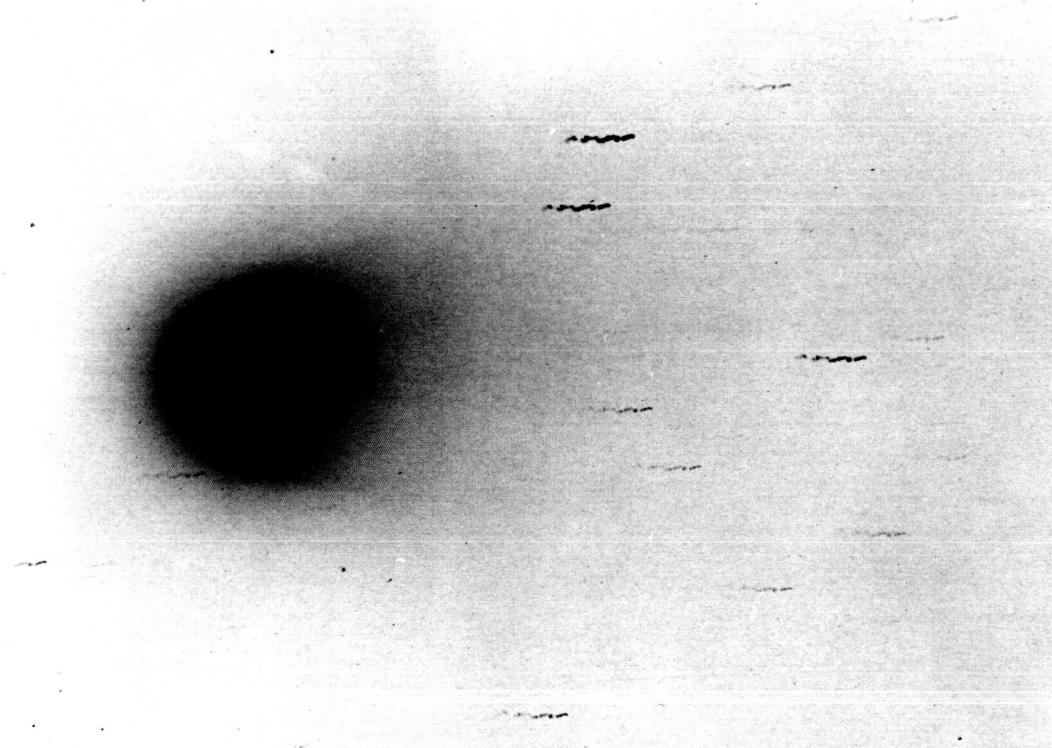


Figure 589-2. 1910 May 28.782; exposure 33 minutes; $r = 1.00$, $\Delta = 0.38$, $\theta = 77^\circ$, $\alpha = 80^\circ$, S = 5.5 E3



Figure 590. 1910 May 29.067; exposure 91 minutes; $r = 1.00$, $\Delta = 0.39$, $\theta = 77^\circ$, $\alpha = 79^\circ$, $S = 6.5$ E4

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Figure 591-1. 1910 May 29.497; exposure 90 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$,
 $\alpha = 78^\circ$, $S = 4.8$ E4

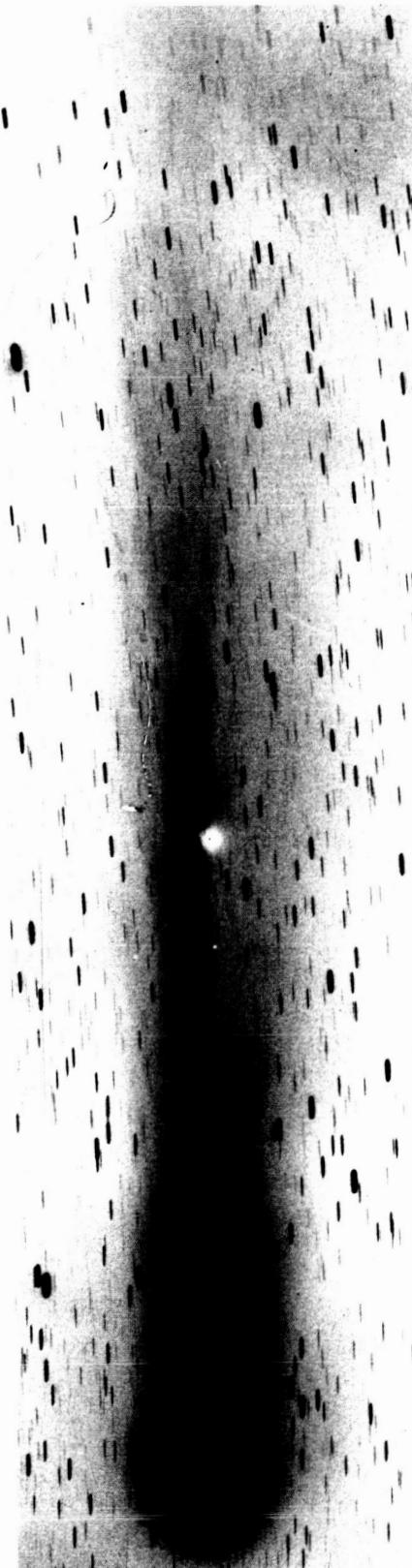


Figure 591-2. 1910 May 29.497; exposure 90 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, $S = 4.8$ E4

ATLAS OF COMET HALLEY 1910 II

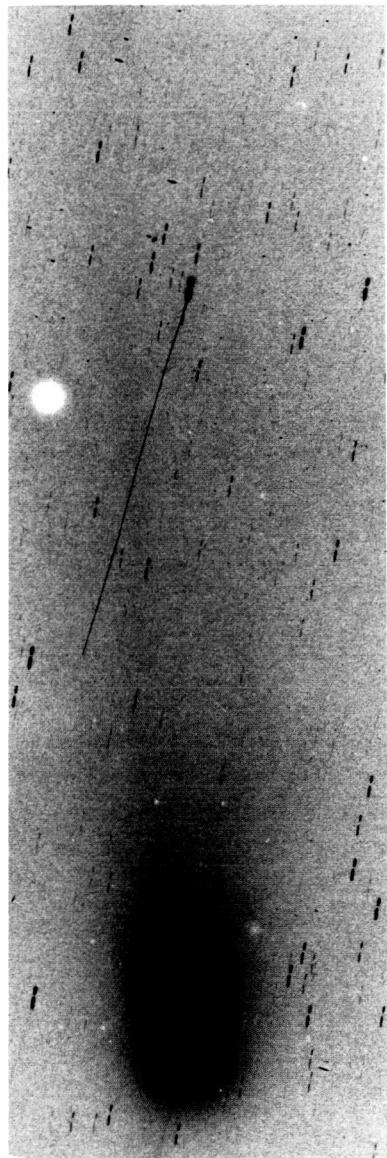


Figure 592. 1910 May 29.584; exposure 51 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, $S = 2.5 \text{ E}4$

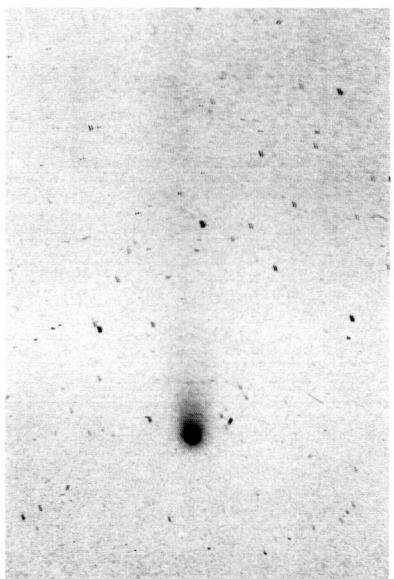


Figure 593. 1910 May 29.587; exposure 32 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, $S = 9.0 \text{ E}4$



Figure 594. 1910 May 29.638; exposure 95 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, $S = 3.1 \text{ E}4$

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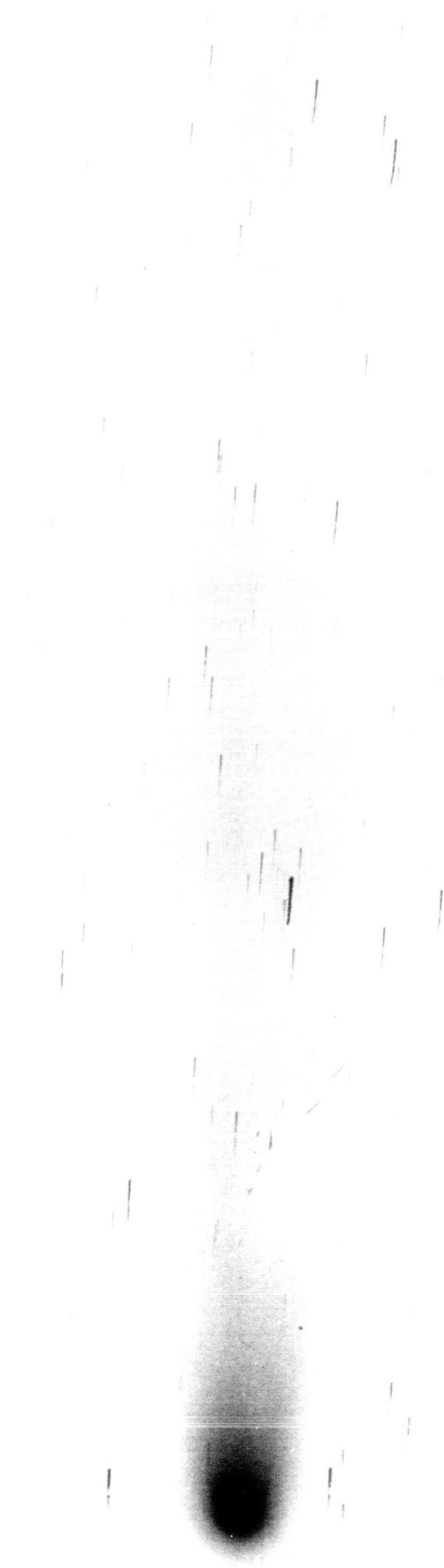


Figure 595-1. 1910 May 29.651; exposure 117 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, $S = 2.4$ E4

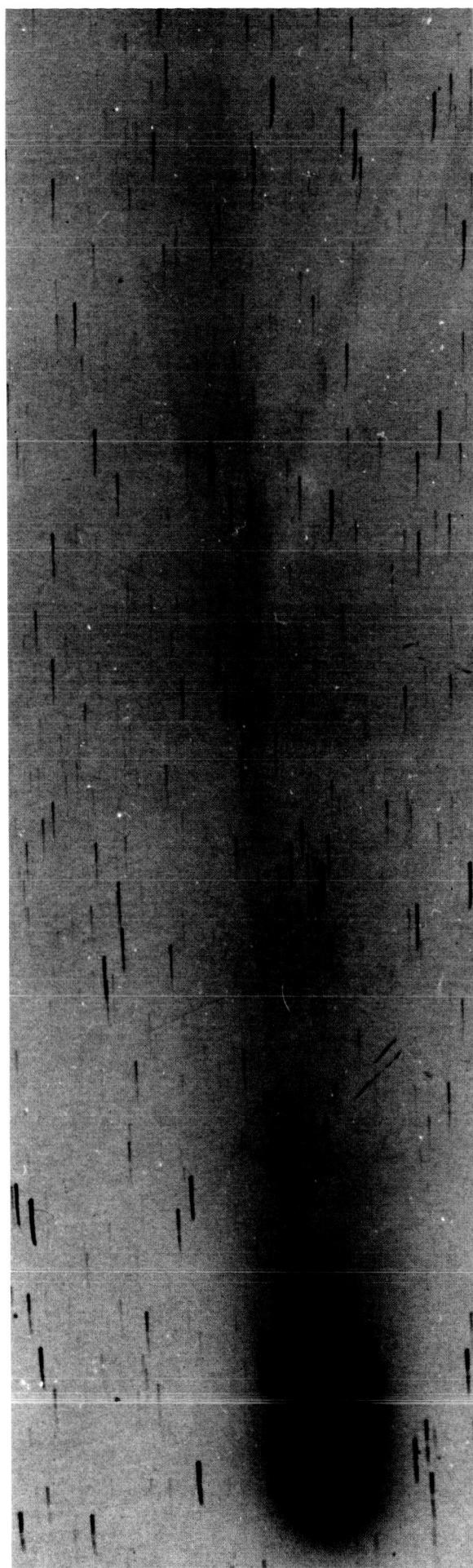


Figure 595-2. 1910 May 29.651; exposure 117 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, $S = 2.4$ E4

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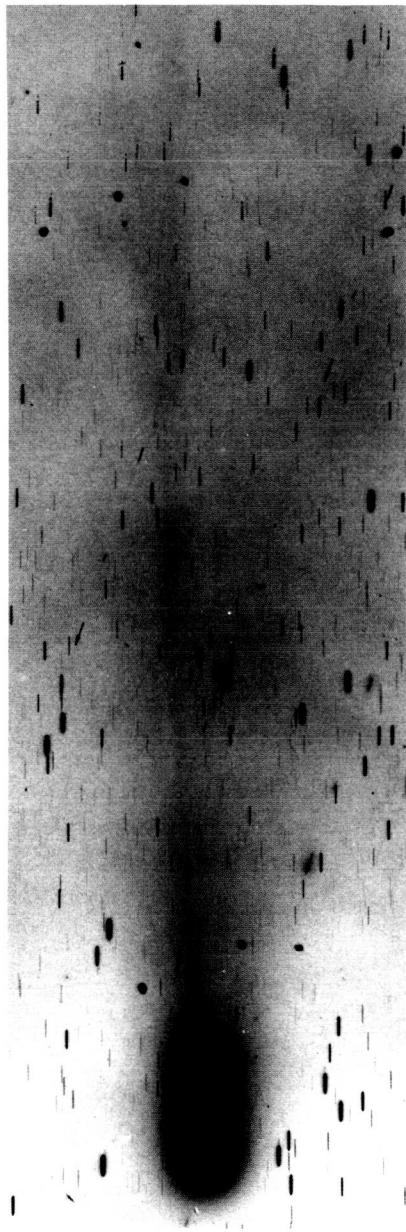


Figure 596. 1910 May 29.690; exposure 57 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 77^\circ$, $S = 3.5 \text{ E}4$

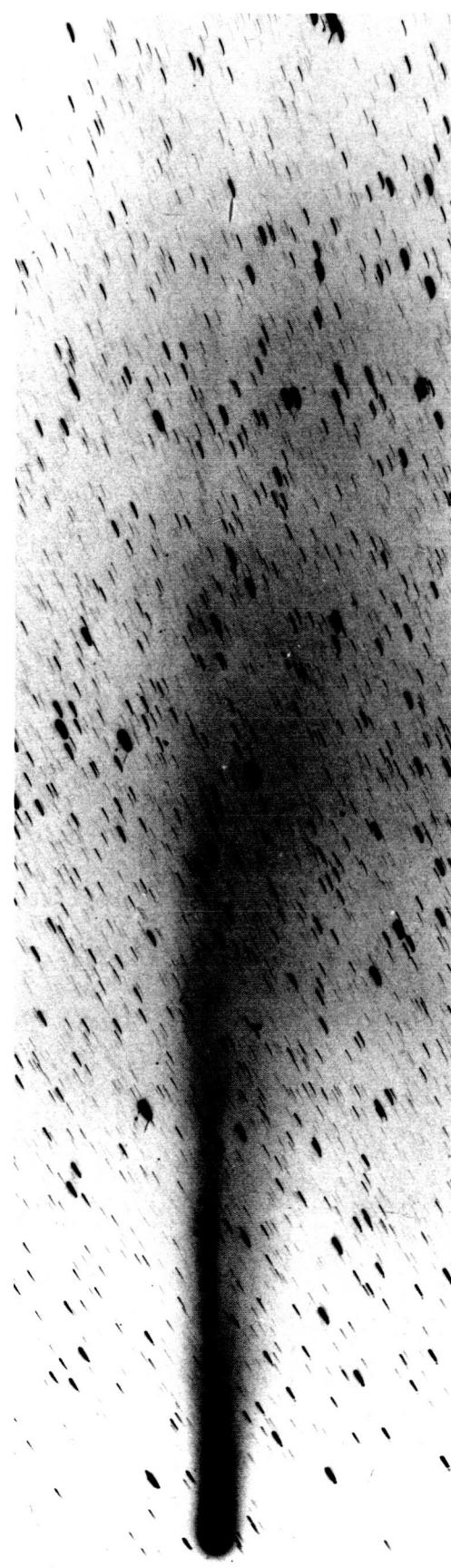


Figure 597. 1910 May 29.717; exposure 135 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, $S = 1.2 \text{ E}5$

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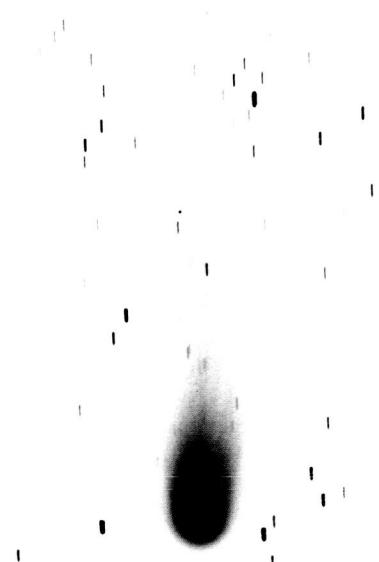


Figure 598-1. 1910 May 29.722; exposure 50 minutes;
 $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, $S = 4.0$ E4

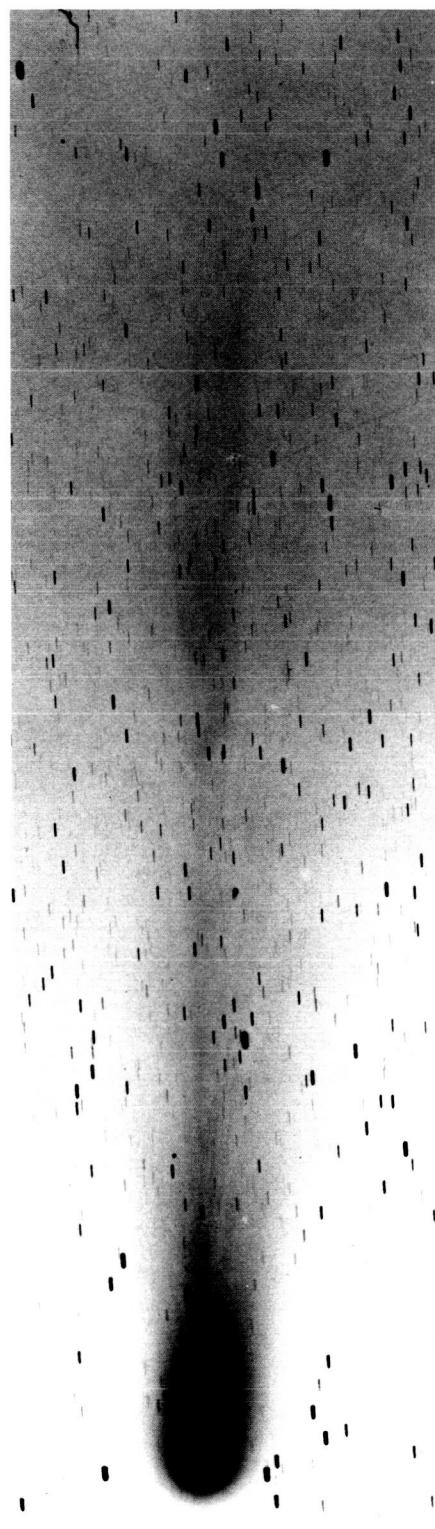


Figure 598-2. 1910 May 29.722; exposure 50 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, $S = 4.0$ E4

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Figure 599-1. 1910 May 29.748; exposure 125 minutes; $r = 1.01$,
 $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, $S = 4.8 \text{ E}4$

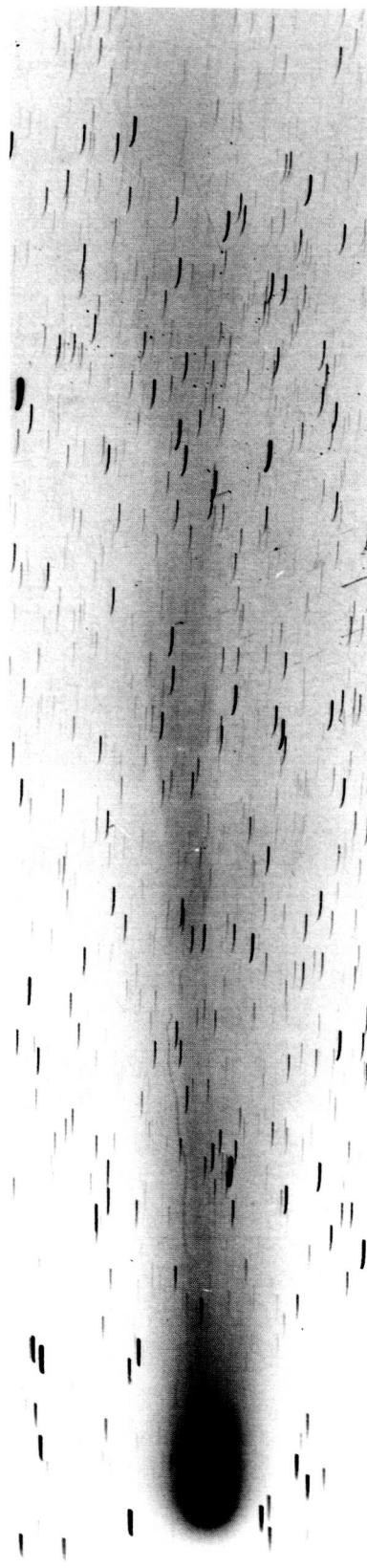


Figure 599-2. 1910 May 29.748; exposure 125 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, $S = 4.8 \text{ E}4$

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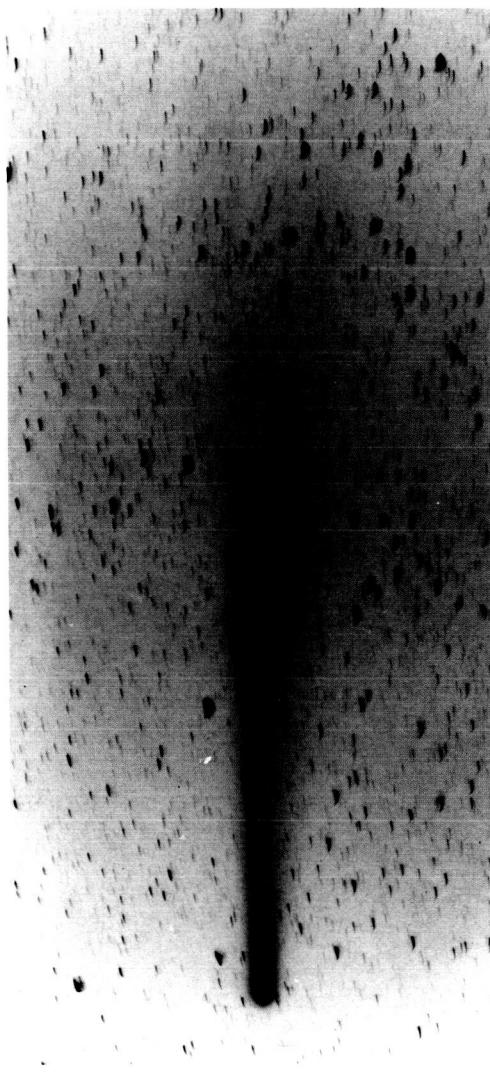


Figure 600. 1910 May 29.759; exposure 142 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$,
 $S = 2.0$ E5

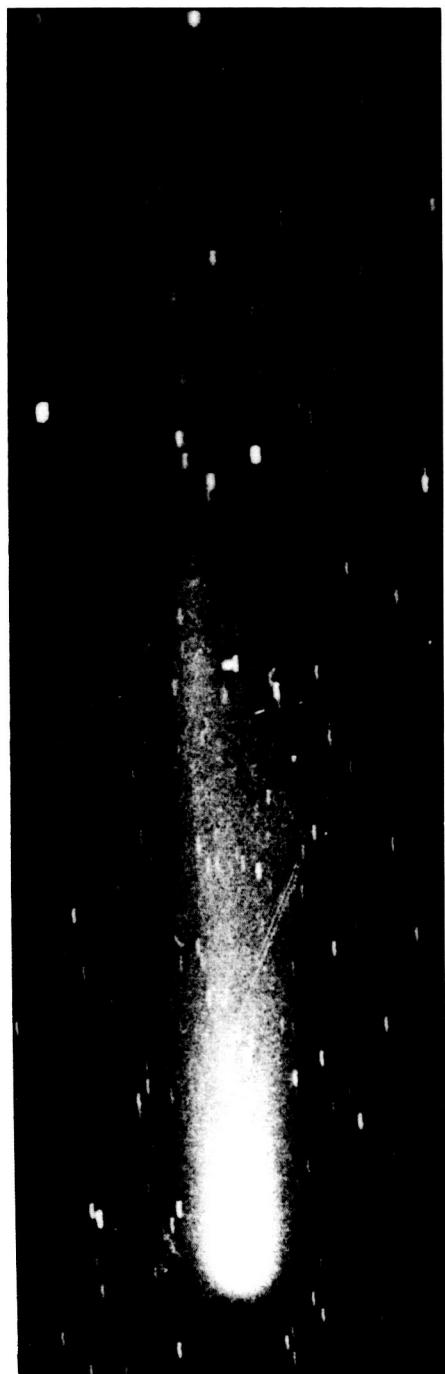


Figure 601. 1910 May 29.990; exposure 90 minutes; $r = 1.02$, $\Delta = 0.43$, $\theta = 78^\circ$, $\alpha = 77^\circ$, $S = 6.3$ E4

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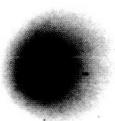


Figure 602-1. 1910 May 29.245; exposure
3 minutes; $r = 1.00$, $\Delta = 0.40$, $\theta = 77^\circ$,
 $\alpha = 79^\circ$, S = 8.8 E3

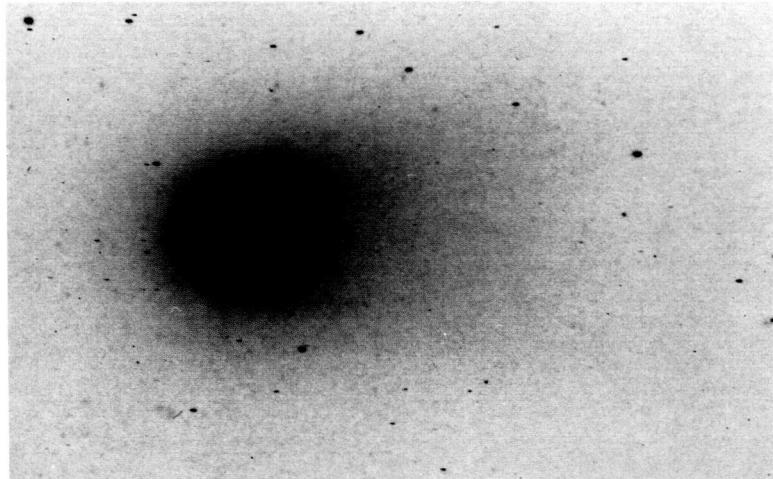


Figure 602-2. 1910 May 29.245; exposure 3 minutes; $r = 1.00$,
 $\Delta = 0.40$, $\theta = 77^\circ$, $\alpha = 79^\circ$, S = 8.8 E3

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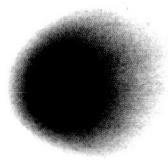


Figure 603-1. 1910 May 29.278; exposure
10 minutes; $r = 1.00$, $\Delta = 0.40$, $\theta = 77^\circ$,
 $\alpha = 79^\circ$, $S = 8.8$ E3

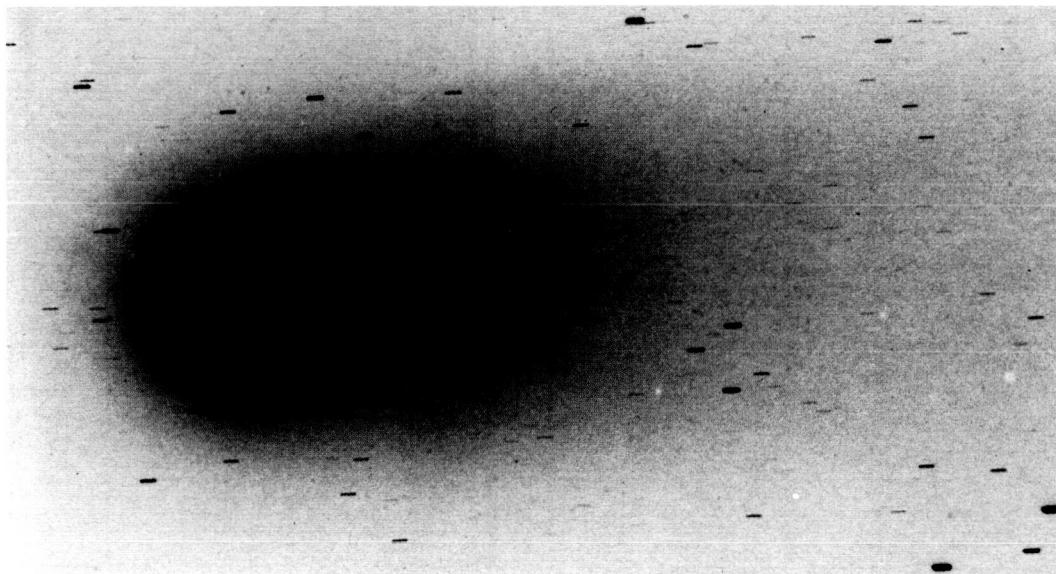


Figure 603-2. 1910 May 29.278; exposure 10 minutes; $r = 1.00$, $\Delta = 0.40$, $\theta = 77^\circ$, $\alpha = 79^\circ$, $S = 8.8$ E3

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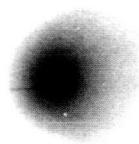


Figure 604-1. 1910 May 29.290; exposure
20 minutes; $r = 1.00$, $\Delta = 0.40$, $\theta = 77^\circ$,
 $\alpha = 79^\circ$, $S = 8.8$ E3



Figure 604-2. 1910 May 29.290; exposure 20 minutes; $r = 1.00$, $\Delta = 0.40$, $\theta = 77^\circ$, $\alpha = 79^\circ$, $S = 8.8$ E3

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Figure 605-1. 1910 May 29.310; exposure 3 minutes; $r = 1.00$, $\Delta = 0.40$, $\theta = 77^\circ$, $\alpha = 79^\circ$, S = 8.8 E3

Figure 606-1. 1910 May 29.343; exposure 5 minutes; $r = 1.01$, $\Delta = 0.40$, $\theta = 77^\circ$, $\alpha = 79^\circ$, S = 8.8 E3

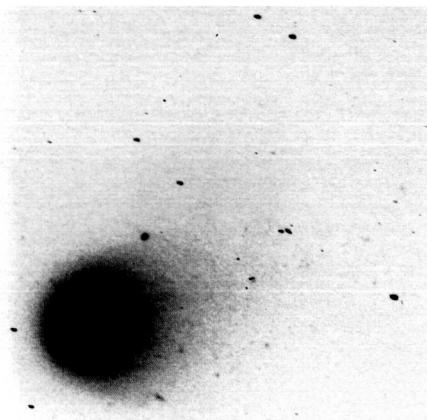


Figure 605-2. 1910 May 29.310; exposure 3 minutes; $r = 1.00$, $\Delta = 0.40$, $\theta = 77^\circ$, $\alpha = 79^\circ$, S = 8.8 E3

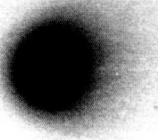


Figure 606-2. 1910 May 29.343; exposure 5 minutes; $r = 1.01$, $\Delta = 0.40$, $\theta = 77^\circ$, $\alpha = 79^\circ$, S = 8.8 E3

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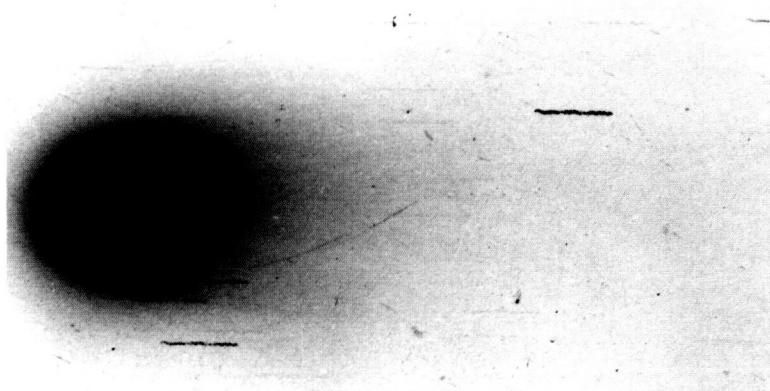


Figure 607. 1910 May 29.478; exposure 60 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, S = 9.0 E3



Figure 608. 1910 May 29.512; exposure 30 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, S = 9.0 E3



Figure 609. 1910 May 29.562; exposure 9 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, S = 1.5 E4

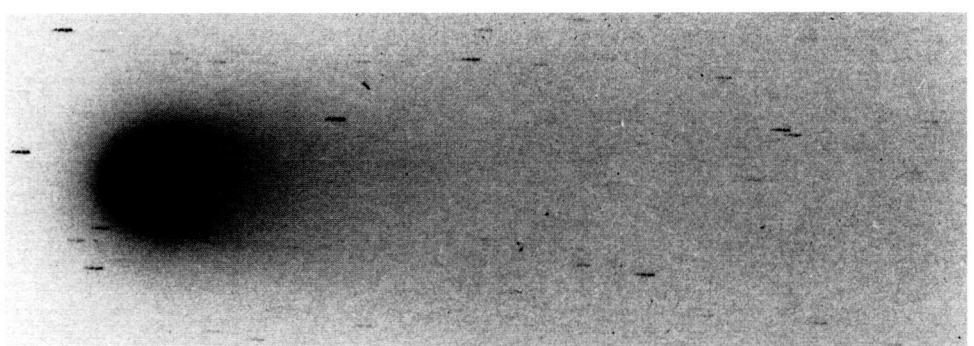


Figure 610-1. 1910 May 29.577; exposure 24 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, S = 1.5 E4

Figure 610-2. 1910 May 29.577; exposure 24 minutes; $r = 1.01$, $\Delta = 0.41$, $\theta = 78^\circ$, $\alpha = 78^\circ$, S = 1.5 E4

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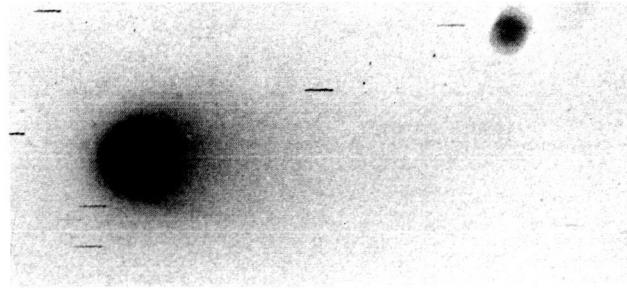


Figure 611. 1910 May 29.579; exposure 35 minutes;
 $r = 1.01, \Delta = 0.41, \theta = 78^\circ, \alpha = 78^\circ, S = 1.5$ E4

Figure 612a. 1910
May 29.669; expo-
sure 7 minutes; $r =$
 $1.01, \Delta = 0.41, \theta =$
 $78^\circ, \alpha = 78^\circ, S =$
5.6 E3

Figure 612b. 1910
May 29.669; expo-
sure 7 minutes; $r =$
 $1.01, \Delta = 0.41, \theta =$
 $78^\circ, \alpha = 78^\circ, S =$
5.6 E3

Figure 612c. 1910
May 29.669; expo-
sure 7 minutes; $r =$
 $1.01, \Delta = 0.41, \theta =$
 $78^\circ, \alpha = 78^\circ, S =$
5.6 E3

Figure 613-1. 1910 May 29.689;
exposure 2 minutes; $r = 1.01, \Delta =$
 $0.41, \theta = 78^\circ, \alpha = 77^\circ, S = 5.9$
E3

Figure 613-2. 1910 May 29.689;
exposure 2 minutes; $r = 1.01, \Delta =$
 $0.41, \theta = 78^\circ, \alpha = 77^\circ, S = 5.9$
E3

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Figure 614-1. 1910 May 29.697; exposure 18 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, S = 5.9 E3

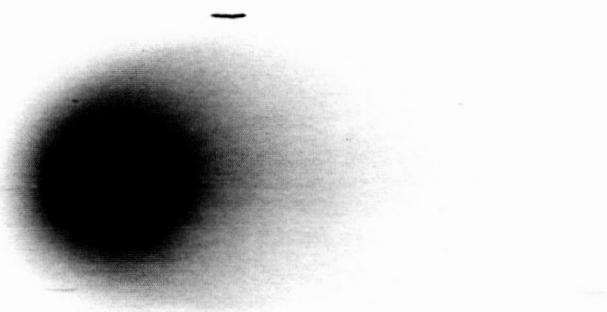


Figure 614-2. 1910 May 29.697; exposure 18 minutes; $r = 1.01$, $\Delta = 0.412$, $\theta = 78^\circ$, $\alpha = 77^\circ$, S = 5.9 E3

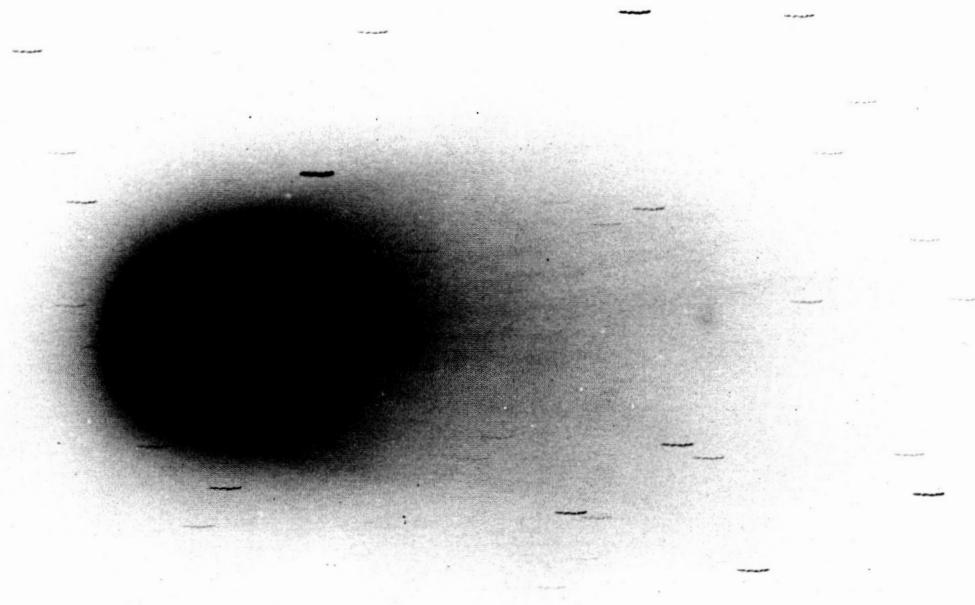


Figure 614-3. 1910 May 29.697; exposure 18 minutes; $r = 1.01$, $\Delta = 0.412$, $\theta = 78^\circ$, $\alpha = 77^\circ$, S = 5.9 E3

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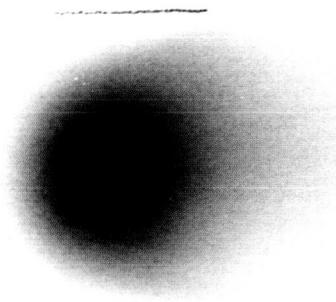


Figure 615-1. 1910 May 29.733; exposure 89 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, S = 6.0 E3

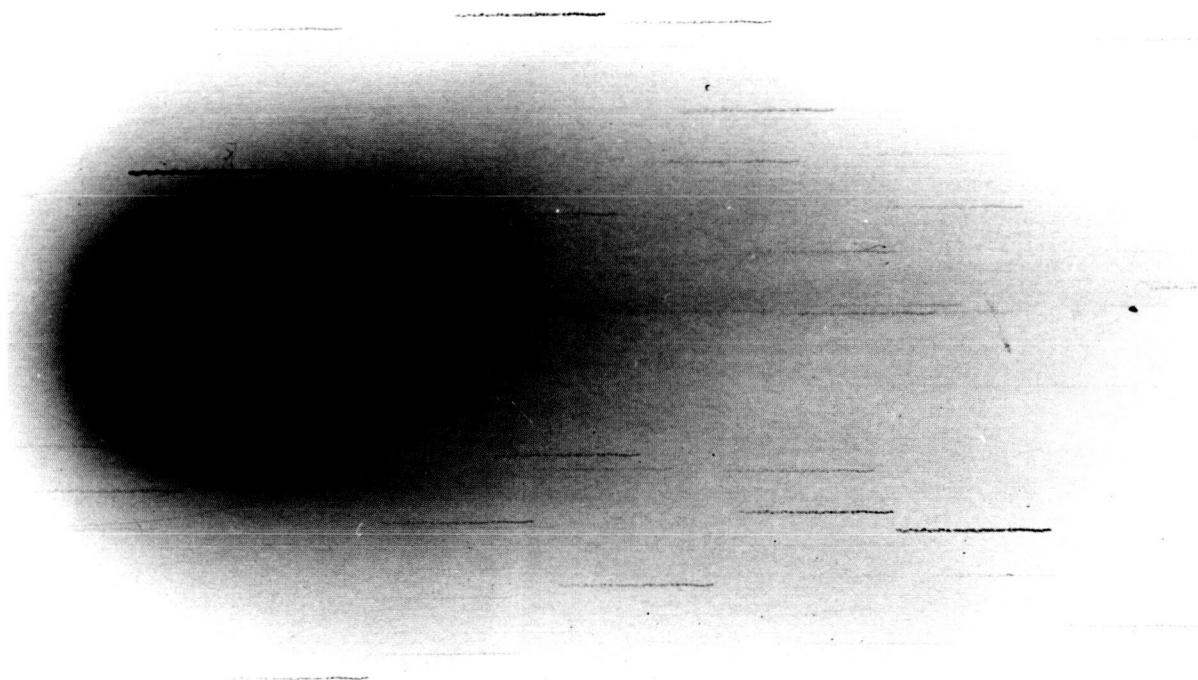


Figure 615-2. 1910 May 29.733; exposure 89 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, S = 6.0 E3

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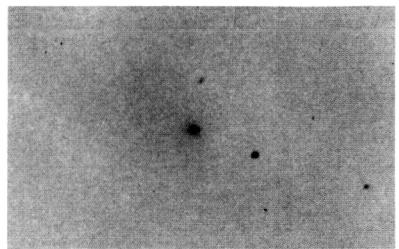


Figure 616a. 1910 May 29.735;
exposure 2 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, $S = 5.7$
E3

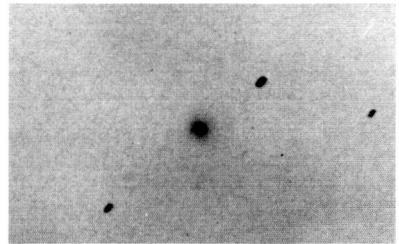


Figure 616b. 1910 May 29.735;
exposure 2 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, $S = 5.7$
E3



Figure 616c. 1910 May 29.735;
exposure 2 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 770$, $S = 5.7$
E3

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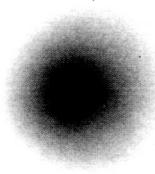


Figure 617-1. 1910 May 29.776; exposure 44 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, S = 6.0 E3

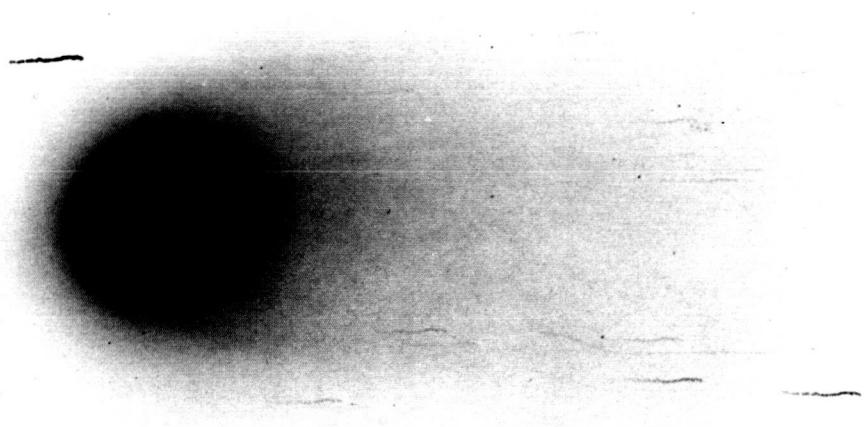


Figure 617-2. 1910 May 29.776; exposure 44 minutes; $r = 1.01$, $\Delta = 0.42$, $\theta = 78^\circ$, $\alpha = 77^\circ$, S = 6.0 E3

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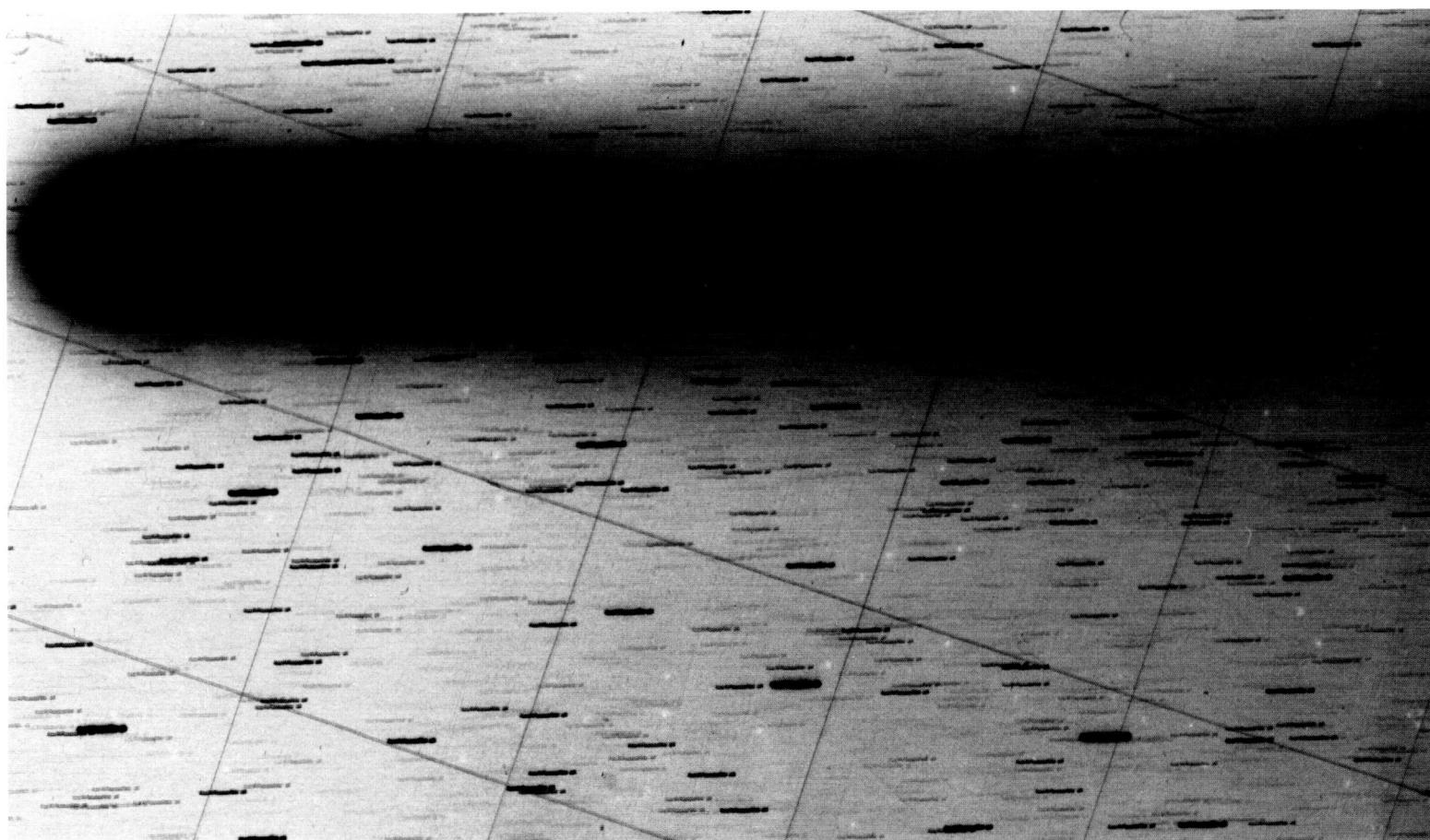


Figure 618. 1910 May 30.248; exposure 120 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 76^\circ$, S = 2.9 E4

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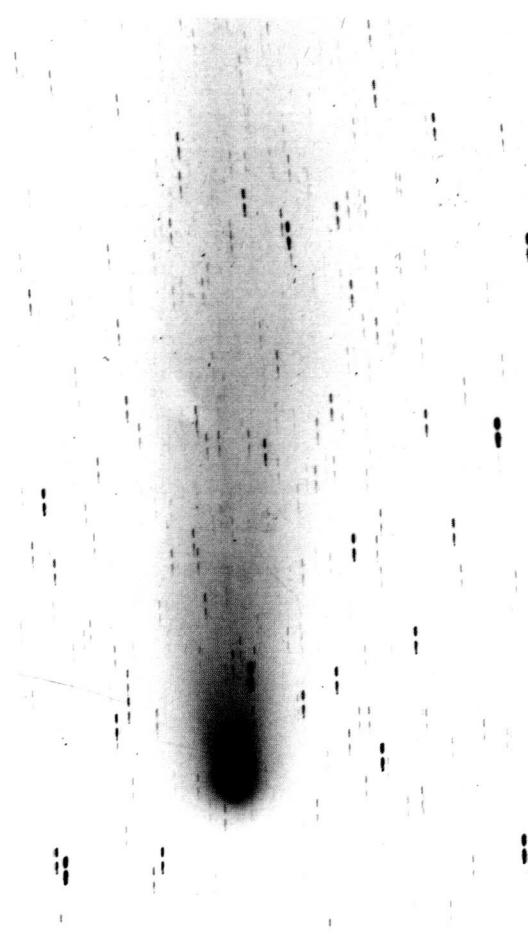


Figure 619-1. 1910 May 30.499; exposure 135 minutes; $r = 1.02$, $\Delta = 0.45$,
 $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 5.3$ E4

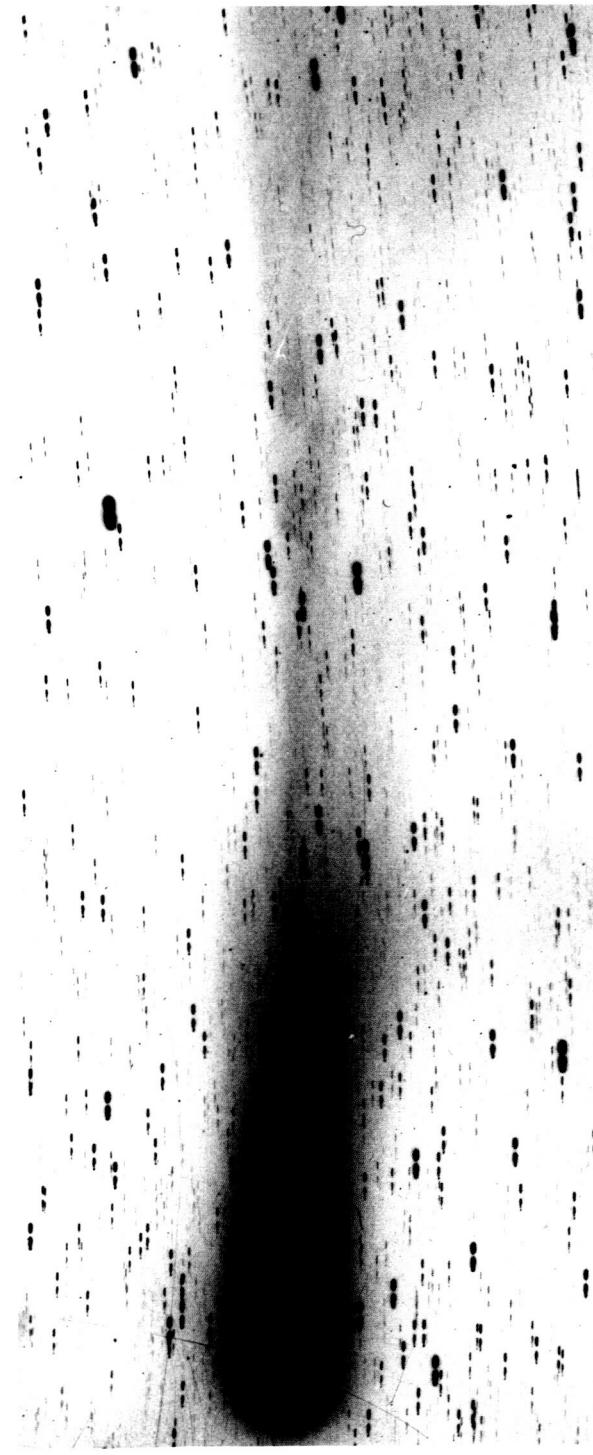


Figure 619-2. 1910 May 30.499; exposure 135 minutes; $r = 1.02$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 5.3$ E4

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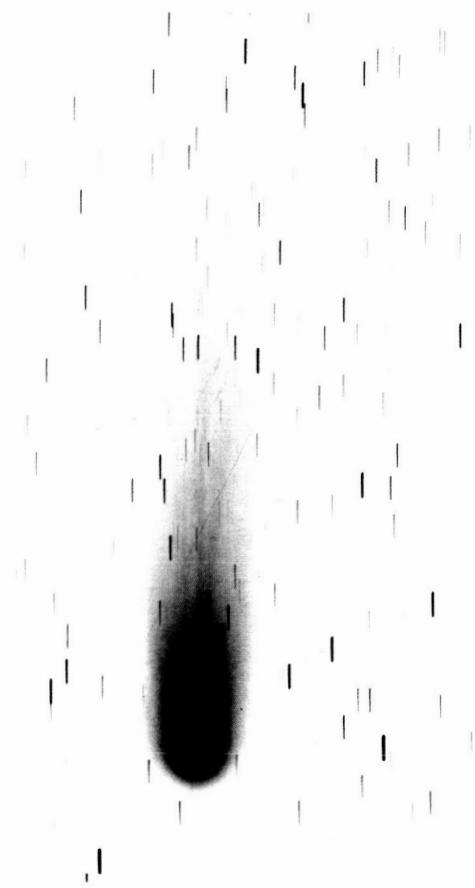


Figure 620-1. 1910 May 30.543; exposure 900 minutes; $r = 1.02$, $\Delta = 0.45$,
 $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 4.6$ E4

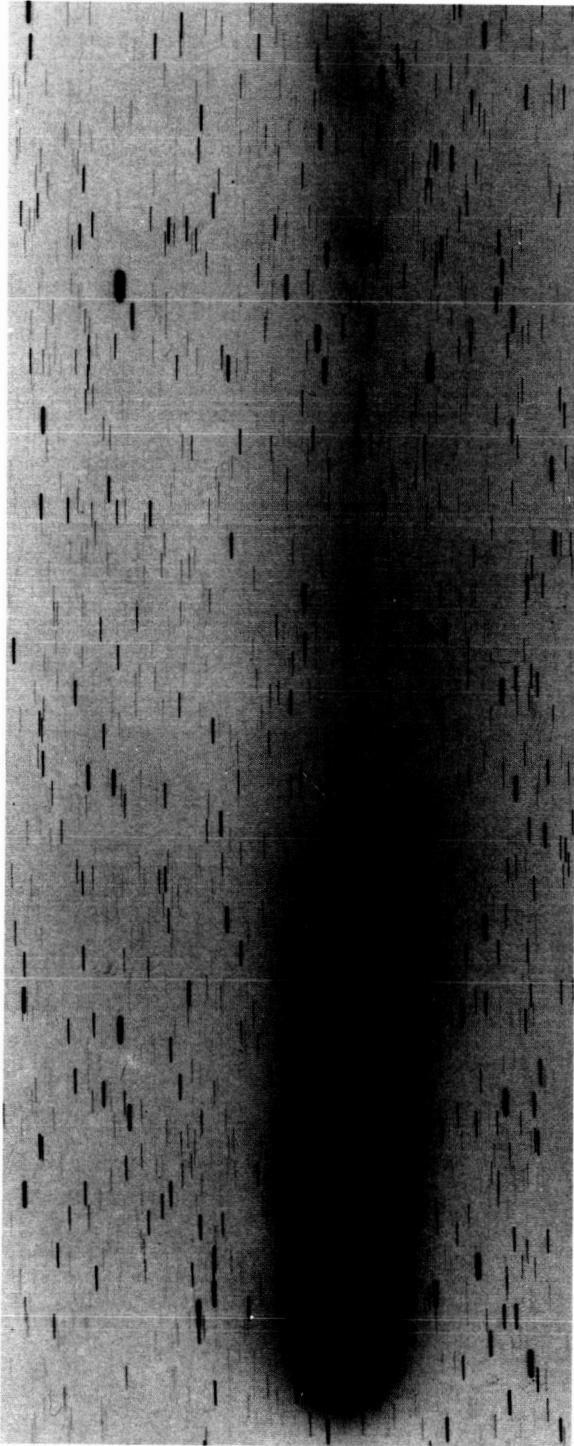


Figure 620-2. 1910 May 30.543; exposure 900 minutes; $r = 1.02$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 4.6$ E4

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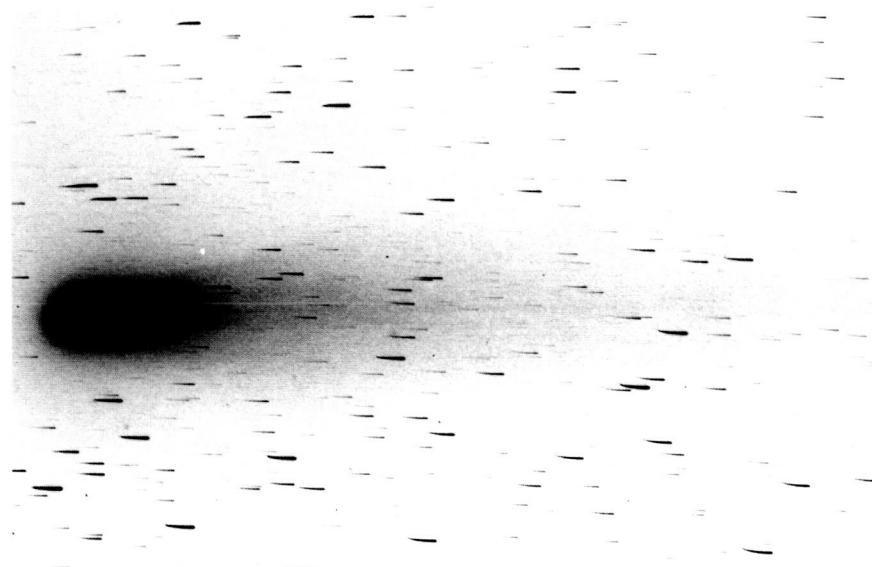


Figure 621-1. 1910 May 30.657; exposure 122 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 5.1 \text{ E}4$

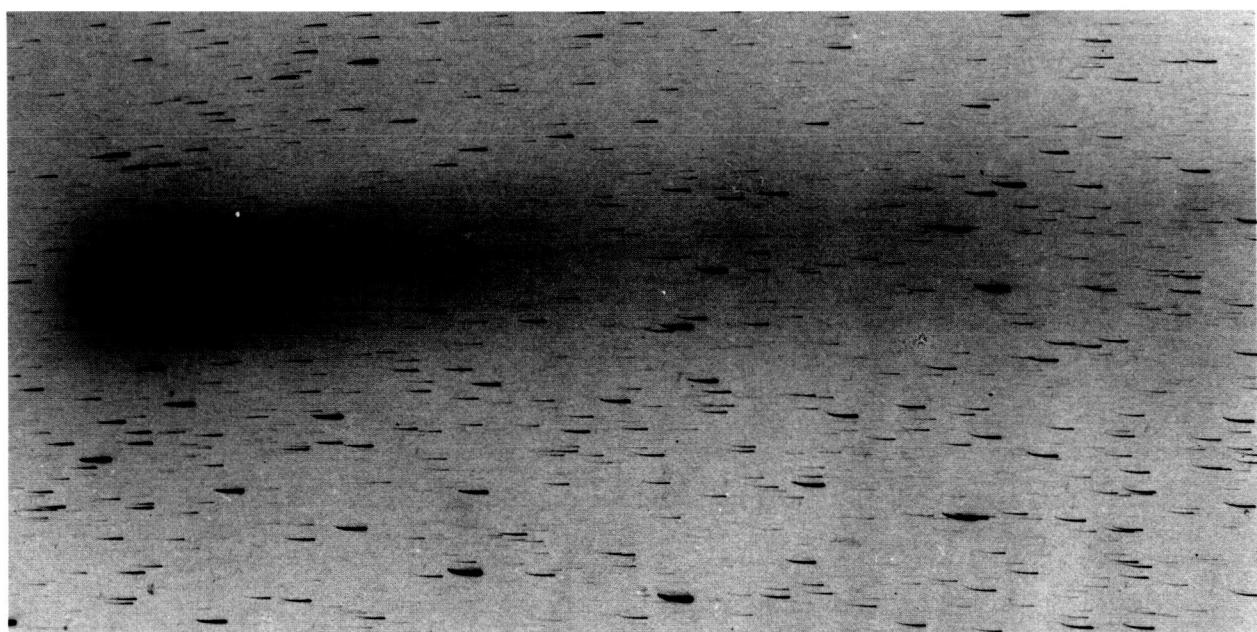


Figure 621-2. 1910 May 30.657; exposure 122 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 5.1 \text{ E}4$

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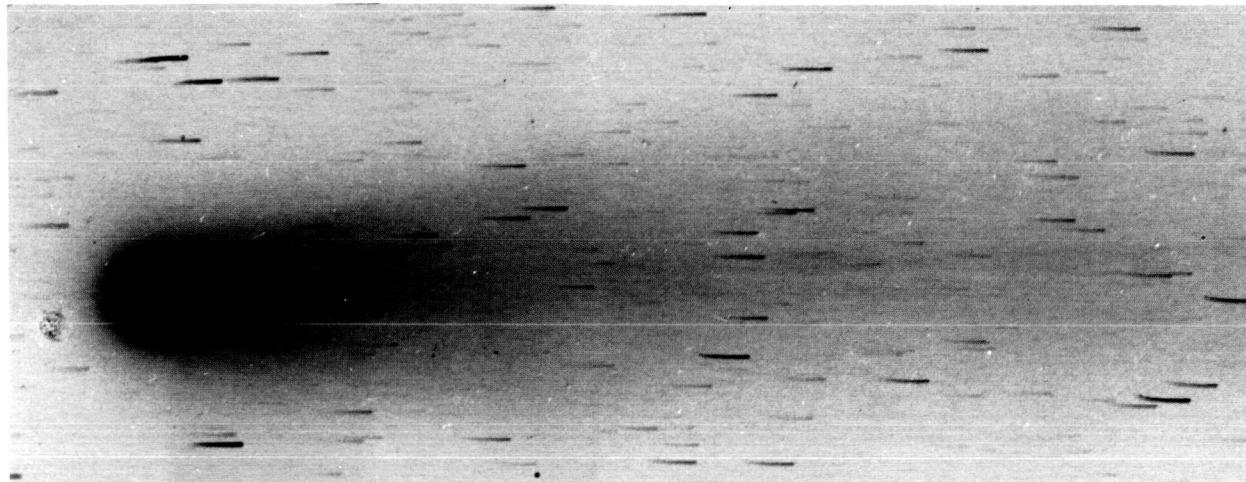


Figure 622-1. 1910 May 30.657; exposure 122 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 2.7 \text{ E}4$

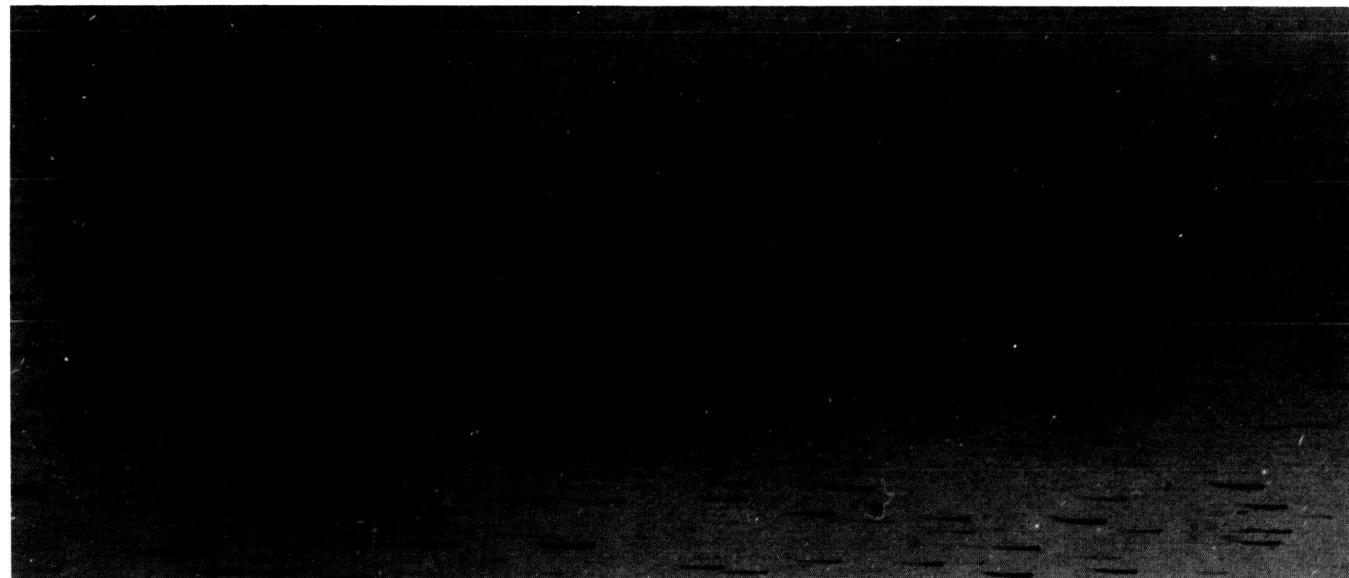


Figure 622-2. 1910 May 30.657; exposure 122 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 2.7 \text{ E}4$

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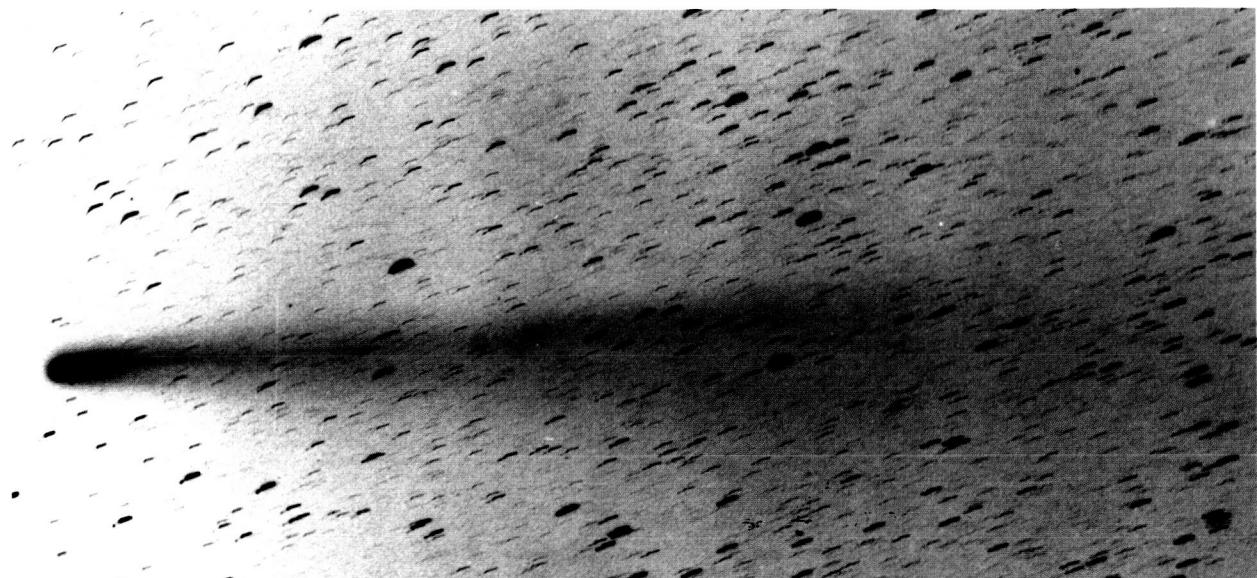


Figure 623. 1910 May 30.722; exposure 127 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 1.3 \text{ E}5$

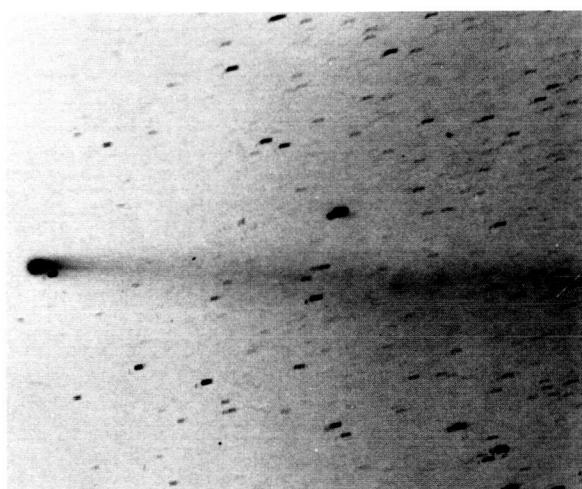


Figure 624. 1910 May 30.722; exposure 127 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 1.6 \text{ E}5$

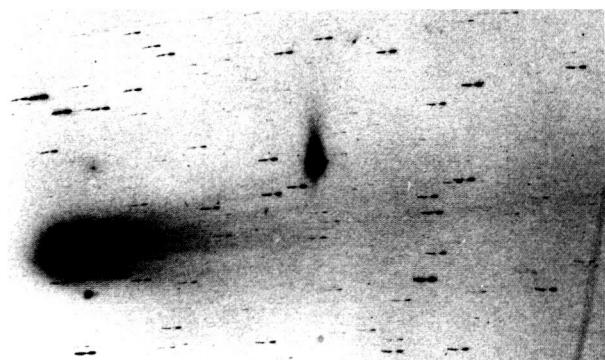


Figure 625. 1910 May 30.740; exposure 73 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 3.9 \text{ E}4$

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Figure 626-1. 1910 May 30.747; exposure 129 minutes; $r = 1.03$,
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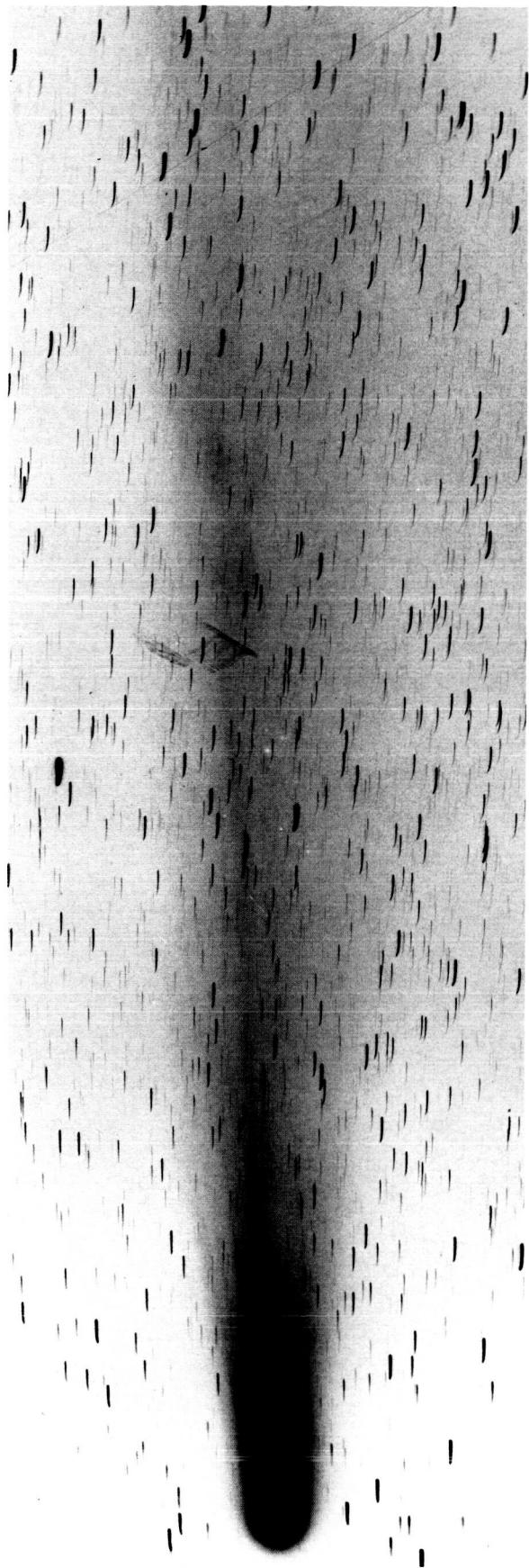


Figure 626-2. 1910 May 30.747; exposure 129 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 74^\circ$, $S = 5.2 \text{ E}4$

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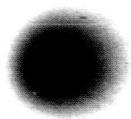


Figure 627-1. 1910 May 30.253; exposure 5 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 76^\circ$, S = 9.6 E3

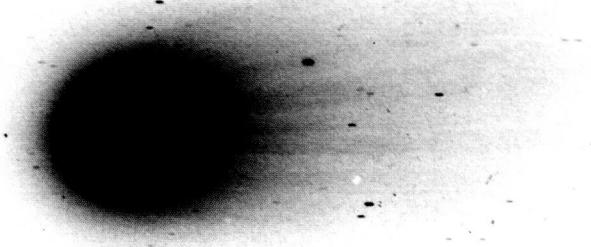


Figure 627-2. 1910 May 30.253; exposure 5 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 76^\circ$, S = 9.6 E3

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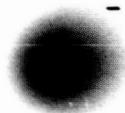


Figure 628-1. 1910 May 30.268; exposure 20 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 76^\circ$, S = 9.6 E3

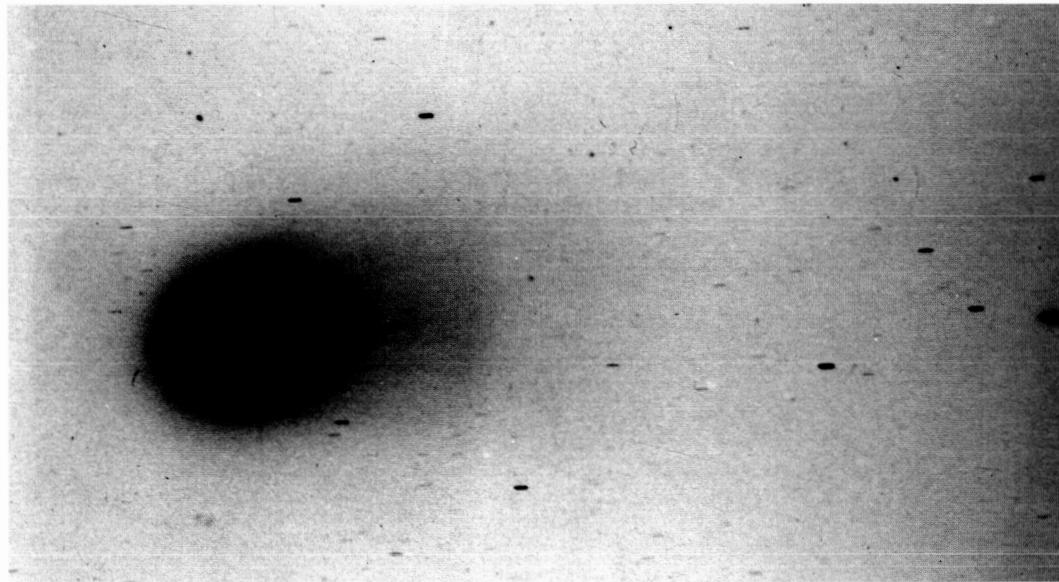


Figure 628-2. 1910 May 30.268; exposure 20 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 76^\circ$, S = 9.6 E3

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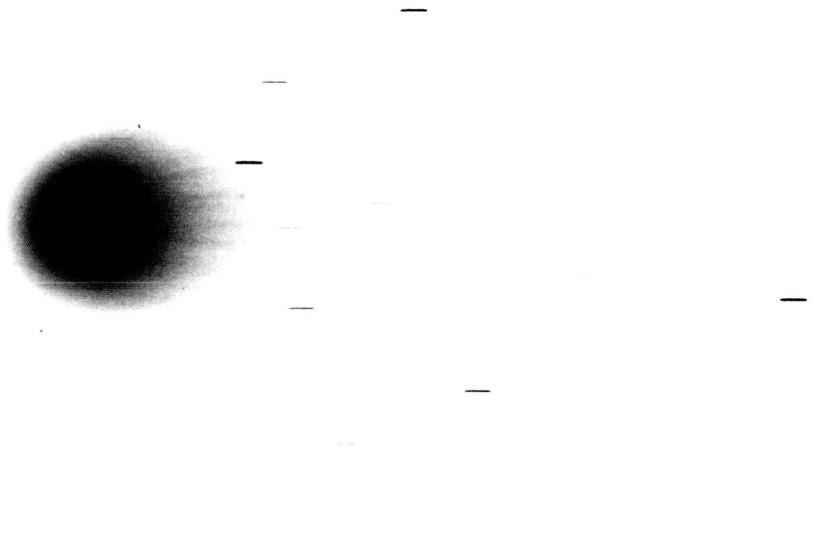


Figure 629-1. 1910 May 30.283; exposure 20 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 76^\circ$, $S = 9.6$ E3

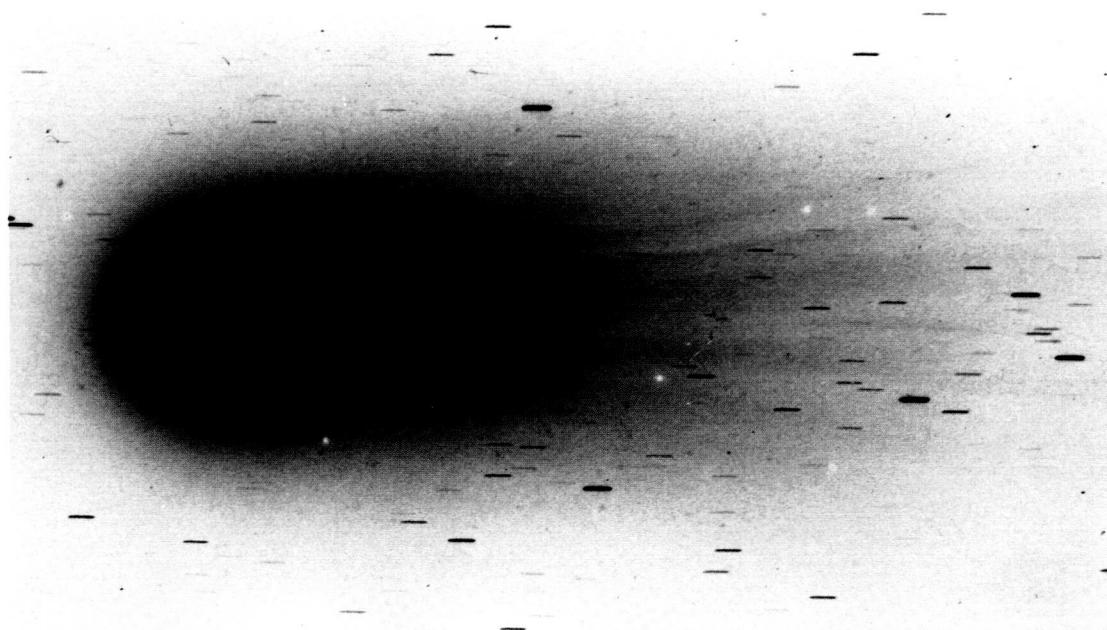


Figure 629-2. 1910 May 30.283; exposure 20 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 76^\circ$, $S = 9.6$ E3

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Figure 630-1. 1910 May 30.304; exposure 10 minutes; $r = 1.02$,
 $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 76^\circ$, S = 9.6 E3

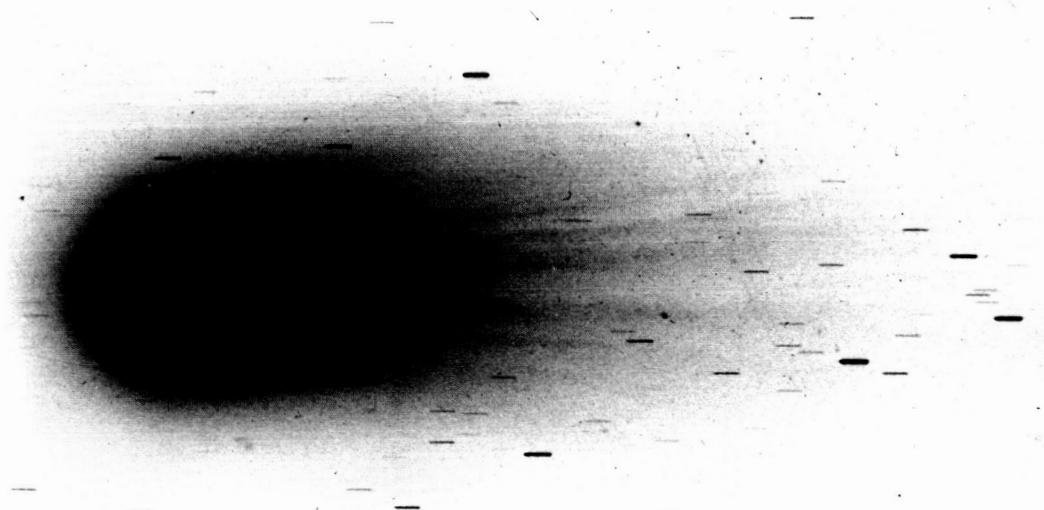


Figure 630-2. 1910 May 30.304; exposure 10 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 76^\circ$, S = 9.6 E3

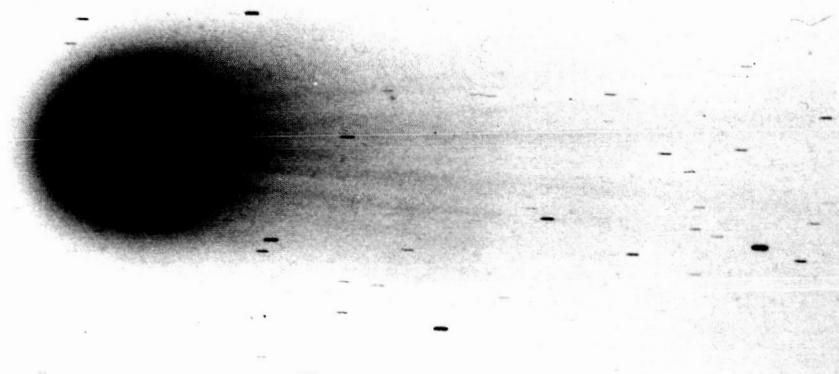


Figure 631. 1910 May 30.336; exposure 10 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$,
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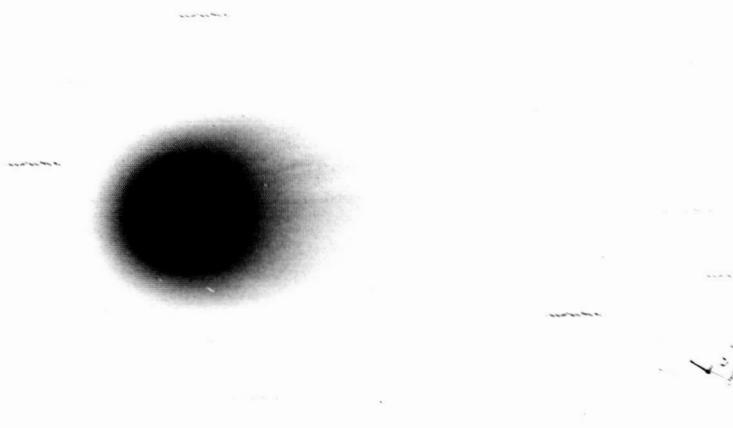


Figure 632-1. 1910 May 30.465; exposure 56 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 75^\circ$, $S = 9.8$ E3



Figure 632-2. 1910 May 30.465; exposure 56 minutes; $r = 1.02$, $\Delta = 0.44$, $\theta = 78^\circ$, $\alpha = 75^\circ$, $S = 9.8$ E3

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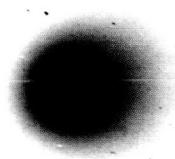


Figure 633. 1910 May 30.516; exposure 30 minutes; $r = 1.02$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, S = 9.8 E3

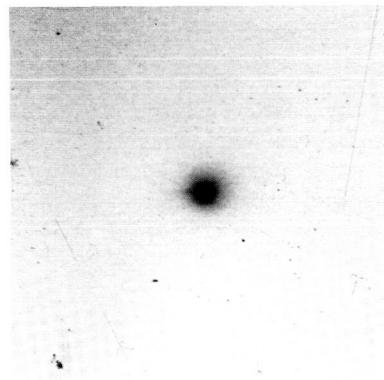


Figure 634a. 1910 May 30.538;
exposure 5 minutes; $r = 1.02$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, S = 9.8 E3

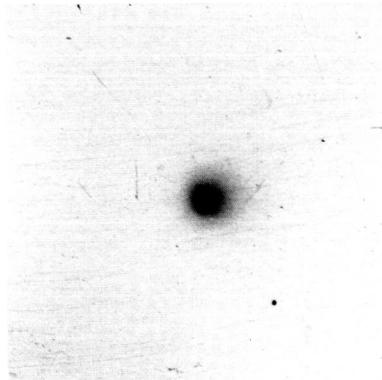


Figure 634b. 1910 May 30.534;
exposure 10 minutes; $r = 1.02$,
 $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, S = 9.8 E3

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Figure 635-1. 1910 May 30.689; exposure 2 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 6.5$ E3

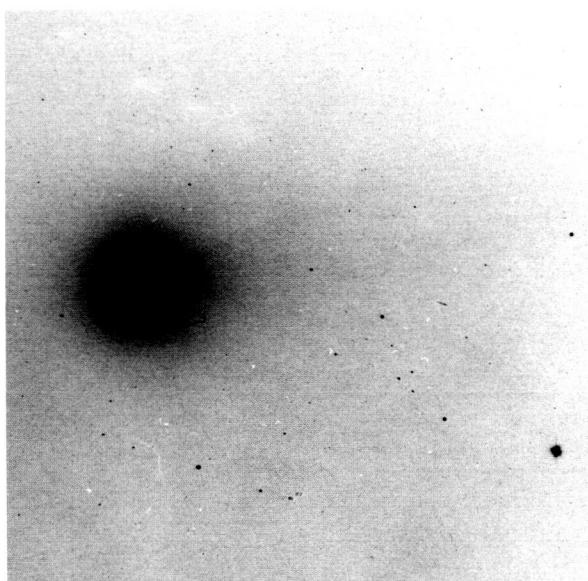


Figure 635-2. 1910 May 30.689; exposure 2 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, $S = 6.5$ E3

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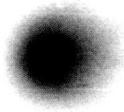


Figure 636-1. 1910 May 30.696; exposure 13 minutes; $r = 1.03$,
 $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, S = 6.5 E3



Figure 636-2. 1910 May 30.696; exposure 13 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$, $\alpha = 75^\circ$, S = 6.5 E3

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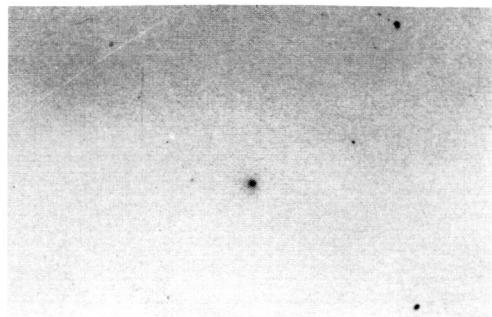


Figure 637a. 1910 May 30.751; exposure
9 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$,
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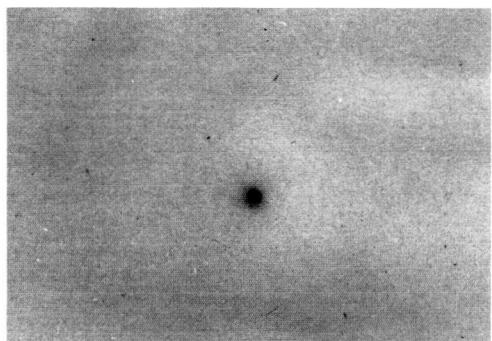


Figure 637b. 1910 May 30.751; exposure
9 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$,
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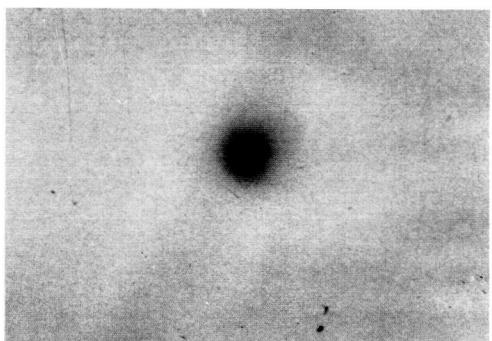


Figure 637c. 1910 May 30.751; exposure
9 minutes; $r = 1.03$, $\Delta = 0.45$, $\theta = 79^\circ$,
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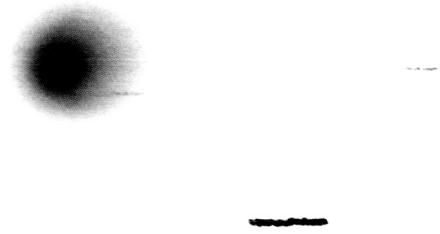


Figure 638-1. 1910 May 30.776; exposure 46 minutes; $r = 1.03$,
 $\Delta = 0.46$, $\theta = 79^\circ$, $\alpha = 74^\circ$, S = 6.5 E3

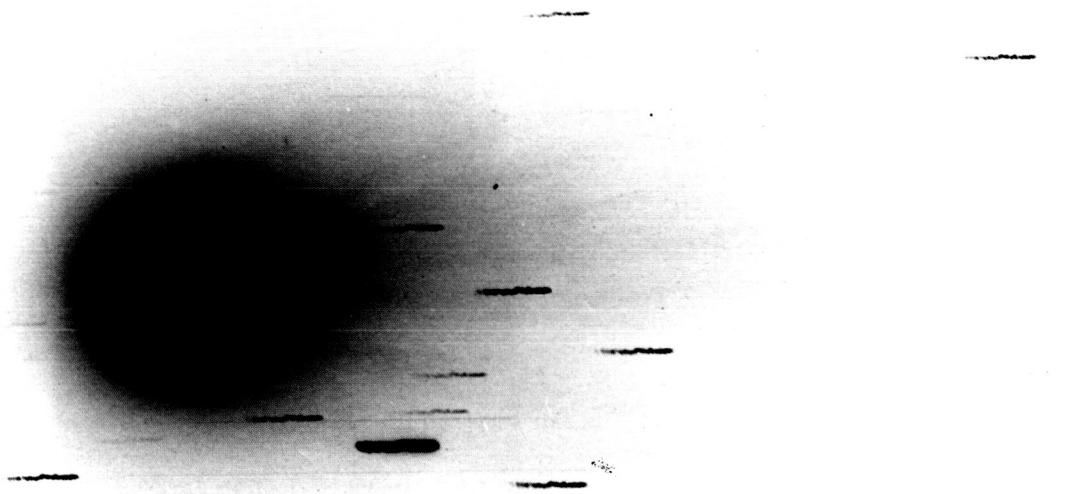


Figure 638-2. 1910 May 30.776; exposure 46 minutes; $r = 1.03$, $\Delta = 0.46$, $\theta = 79^\circ$, $\alpha = 74^\circ$, S = 6.5 E3

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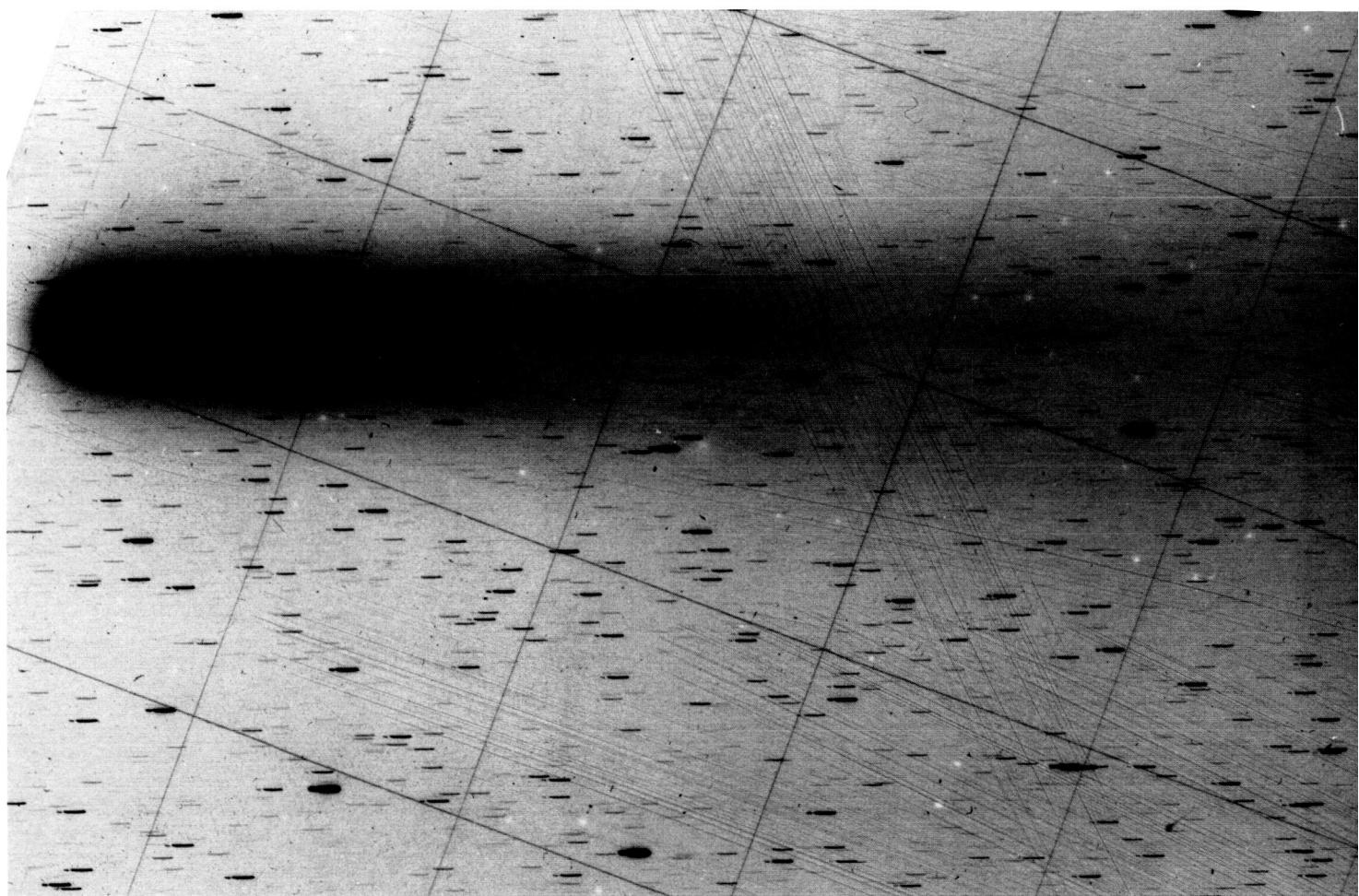
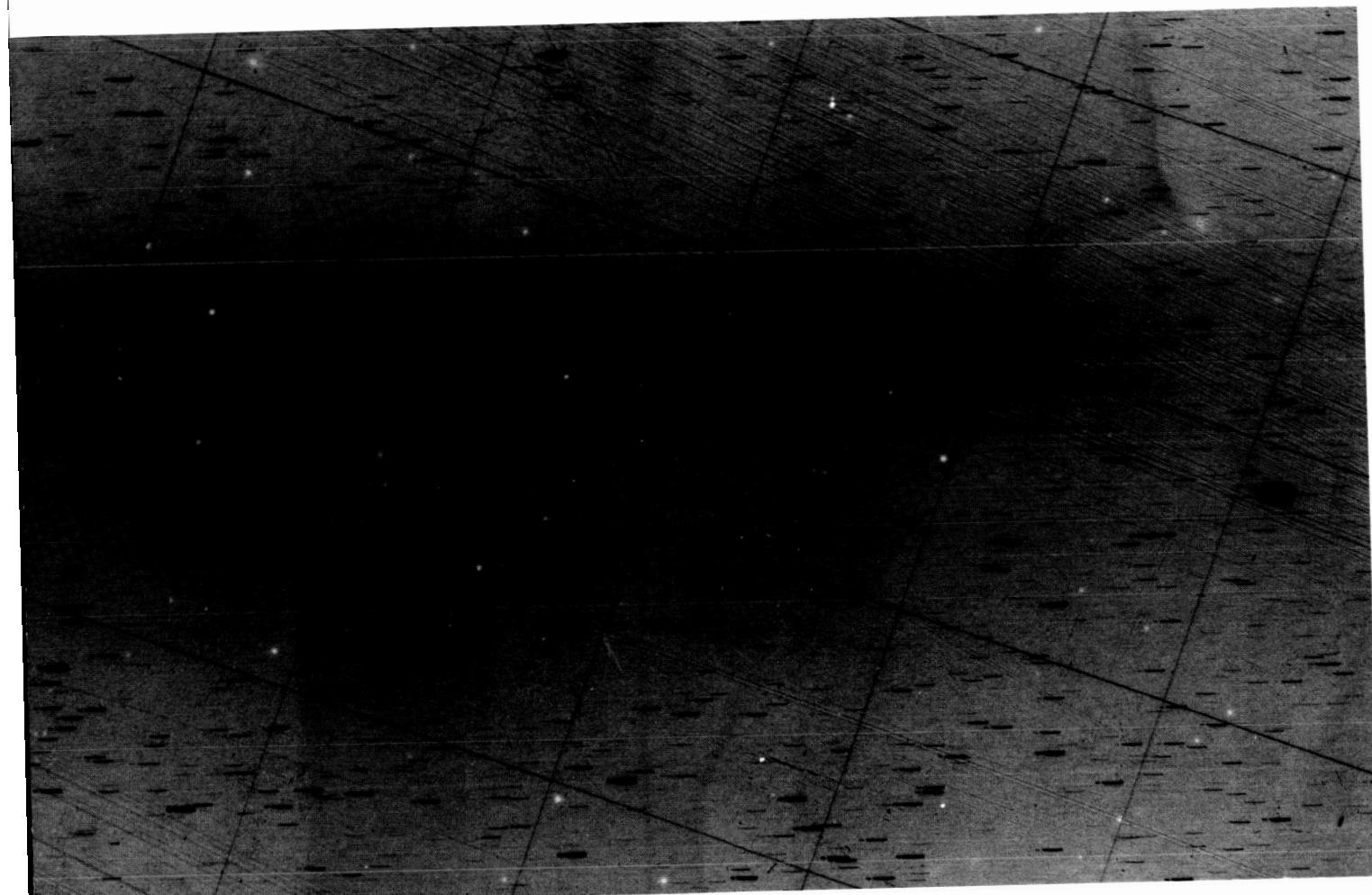


Figure 639. 1910 May 31.238; exposure 79 minutes; $r = 1.03$, $\Delta = 0.47$, $\theta = 79^\circ$, $\alpha = 73^\circ$, $S = 3.1 \text{ E}4$

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Figure 640-1. 1910 May 31.484; exposure 121 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 73^\circ$, $S = 5.7$ E4

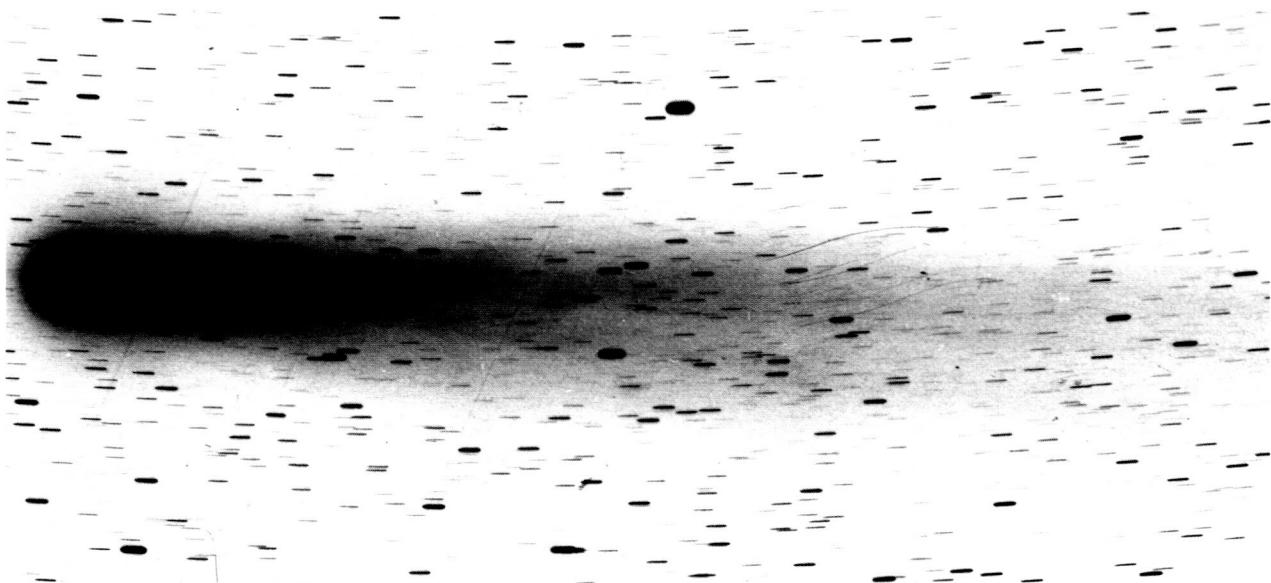


Figure 640-2. 1910 May 31.484; exposure 121 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 73^\circ$, $S = 5.7$ E4

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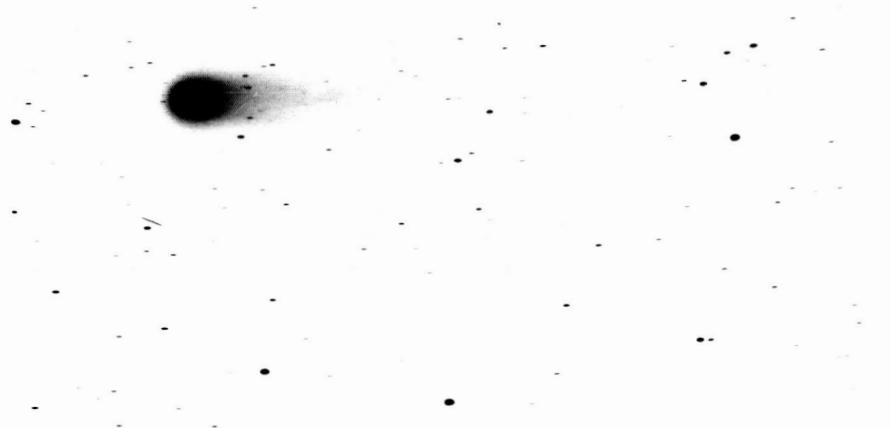


Figure 641-1. 1910 May 31.540; exposure 30 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 5.7$ E4

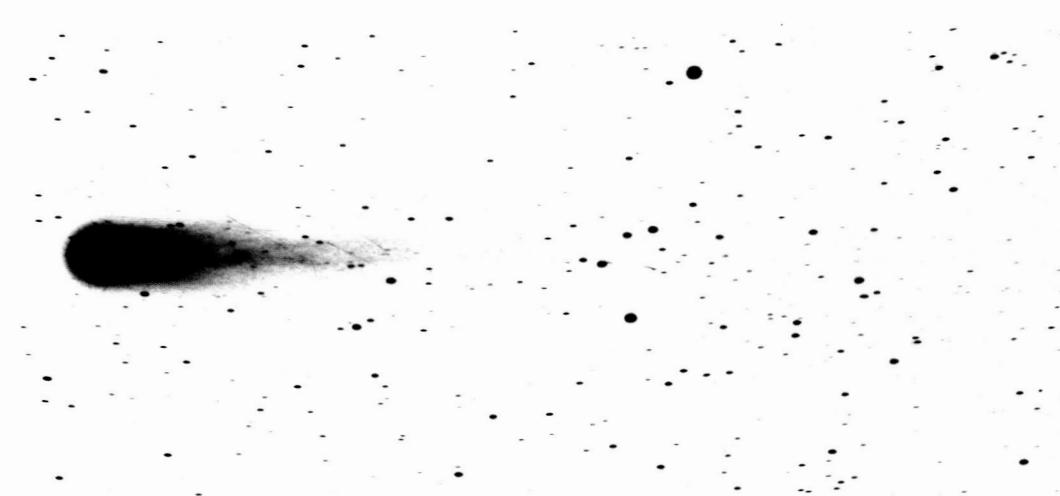


Figure 641-2. 1910 May 31.540; exposure 30 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 5.7$ E4

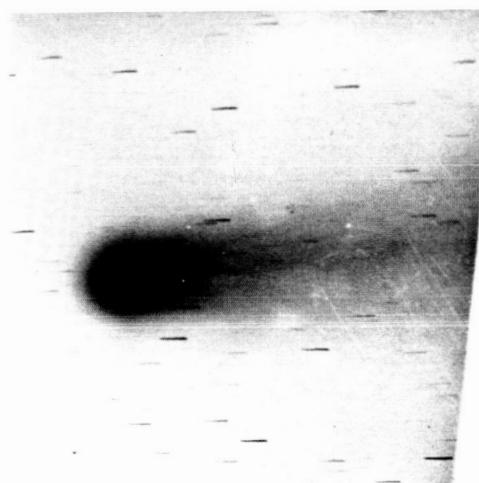


Figure 642. 1910 May 31.635; exposure 90 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 3.6$ E4

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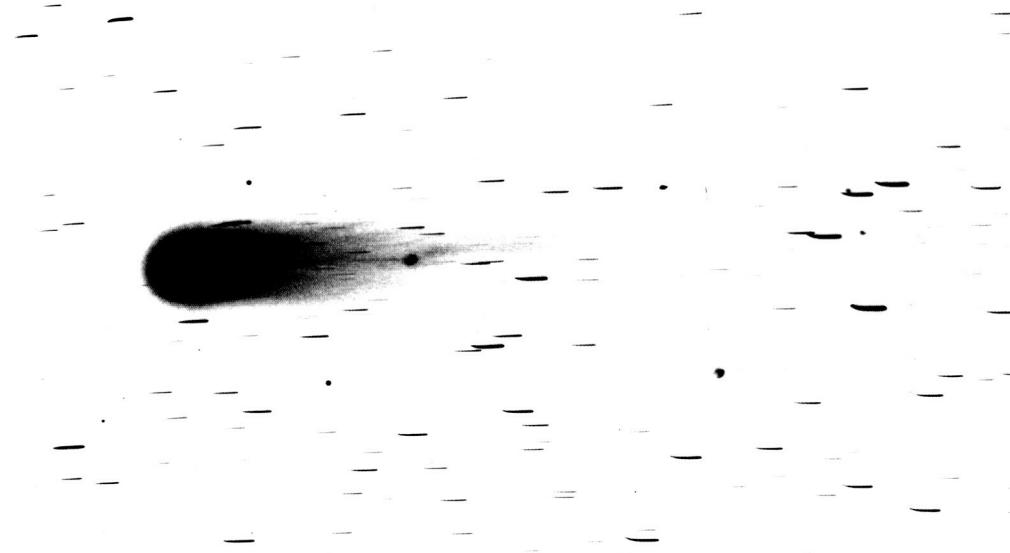


Figure 643-1. 1910 May 31.719; exposure 131 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 4.2 \text{ E}4$



Figure 643-2. 1910 May 31.719; exposure 131 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 4.2 \text{ E}4$

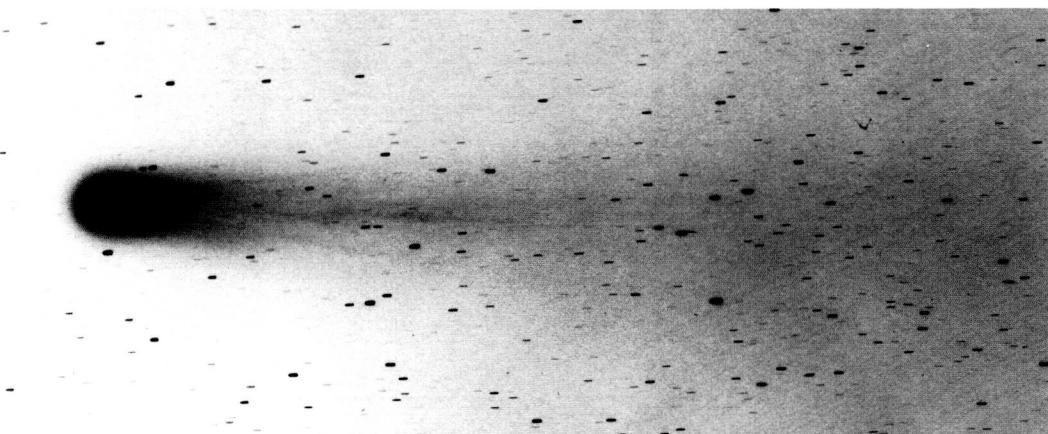


Figure 644. 1910 May 31.724; exposure 46 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 4.7 \text{ E}4$

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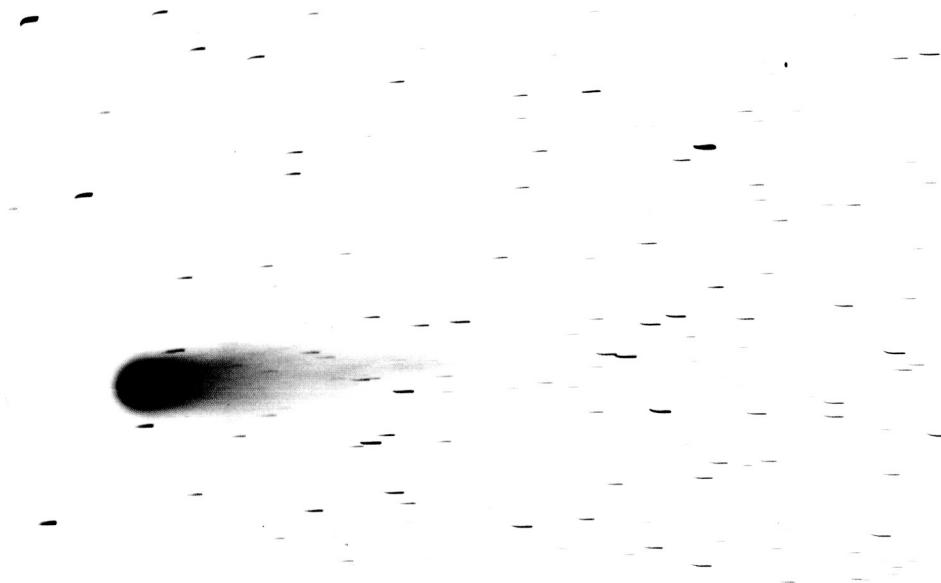


Figure 645-1. 1910 May 31.750; exposure 122 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 5.7$ E4

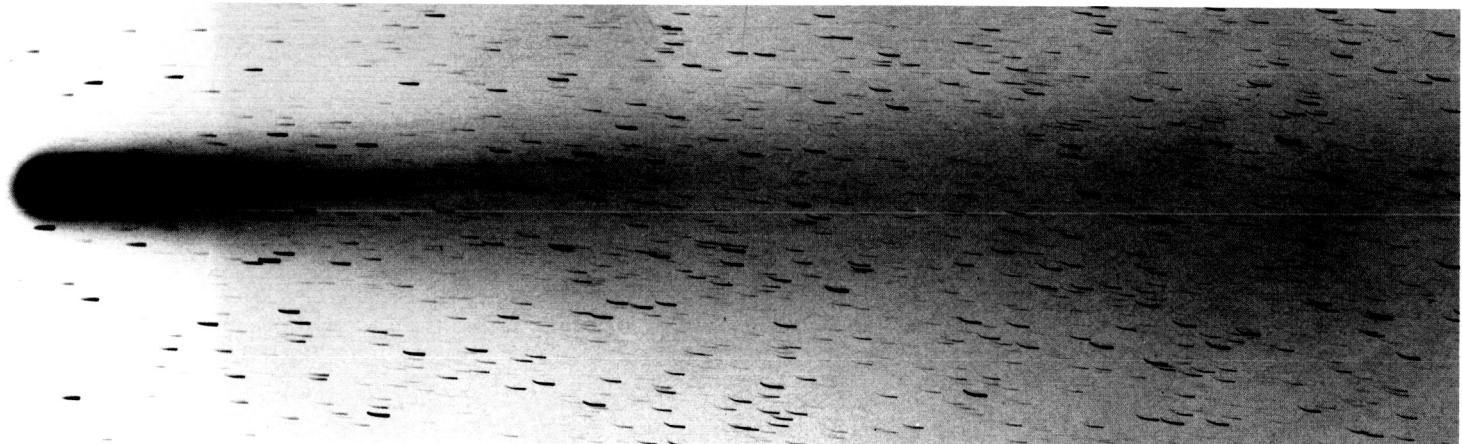


Figure 645-2. 1910 May 31.750; exposure 122 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 5.7$ E4

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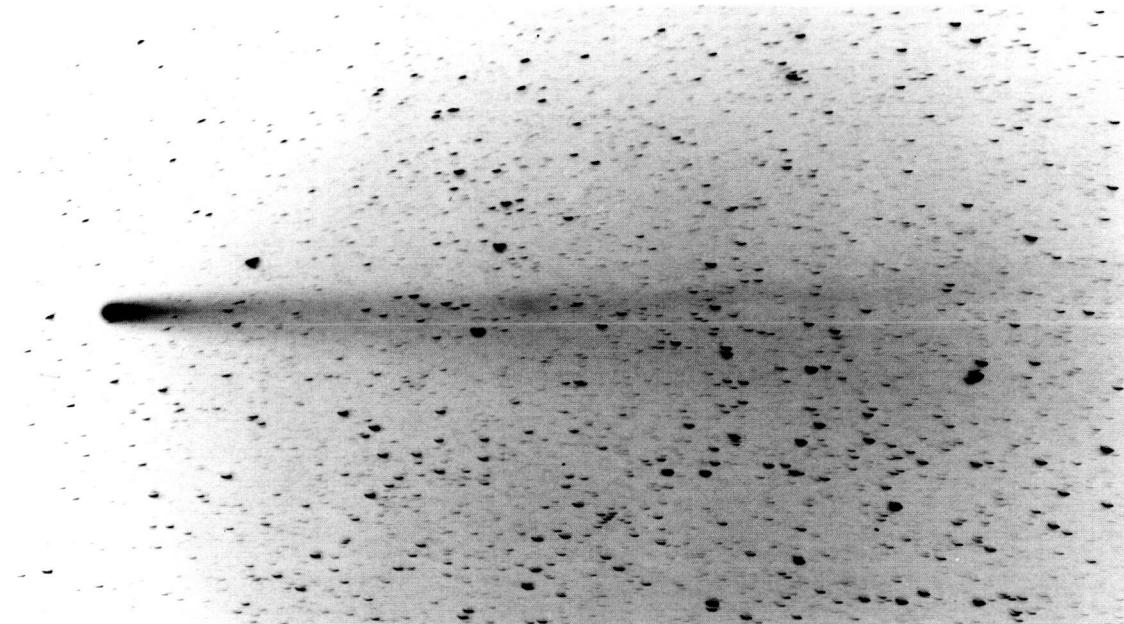


Figure 646. 1910 May 31.755; exposure 136 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 2.4 \text{ E}5$



Figure 647. 1910 May 31.756; exposure 240 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 1.4 \text{ E}5$

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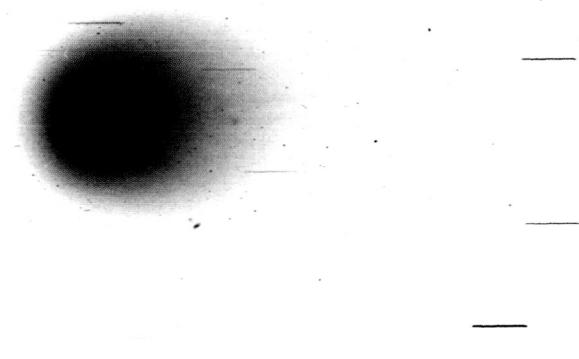


Figure 648-1. 1910 May 31.458; exposure 60 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 73^\circ$, $S = 1.1 \text{ E}4$



Figure 648-2. 1910 May 31.458; exposure 60 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 73^\circ$, $S = 1.1 \text{ E}4$

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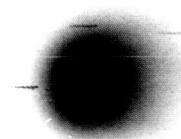


Figure 649. 1910 May 31.492; exposure 30 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 73^\circ$, $S = 1.1 \text{ E}4$

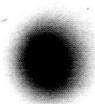


Figure 650. 1910 May 31.508; exposure 10 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 73^\circ$, $S = 1.1 \text{ E}4$

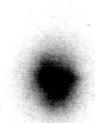


Figure 651a. 1910 May 31.521; exposure 3 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 73^\circ$, $S = 5.3 \text{ E}3$

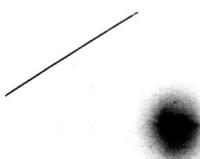


Figure 651b. 1910 May 31.517; exposure 5 minutes; $r = 1.04$, $\Delta = 0.48$, $\theta = 79^\circ$, $\alpha = 73^\circ$, $S = 5.3 \text{ E}3$

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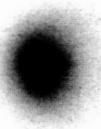


Figure 652. 1910 May 31.692; exposure 2 minutes;
 $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, S = 7.0 E3

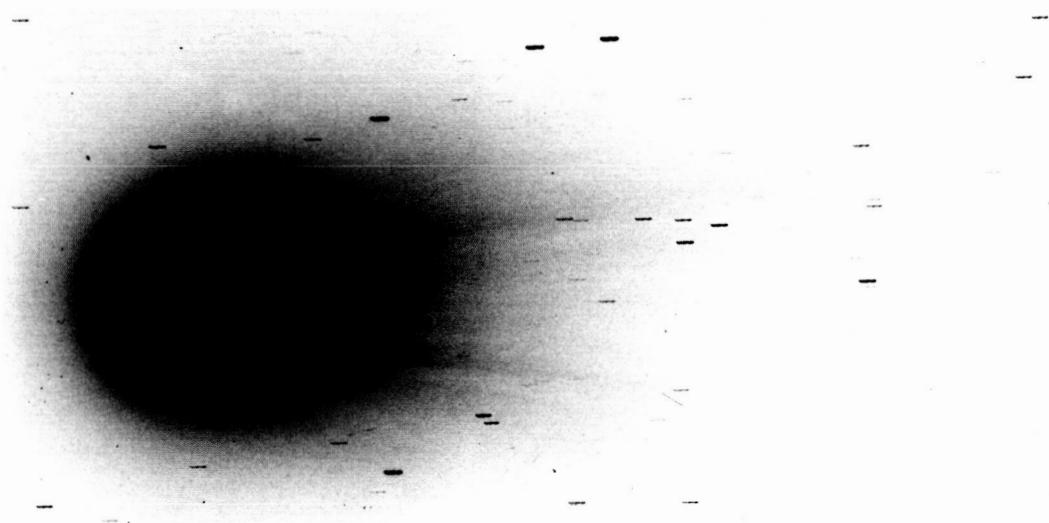


Figure 653. 1910 May 31.699; exposure 13 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$,
S = 7.0 E3

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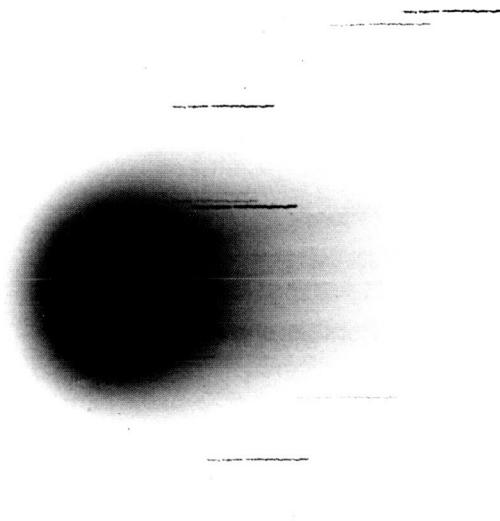


Figure 654-1. 1910 May 31.734; exposure 76 minutes; $r = 1.04$, $\Delta = 0.49$,
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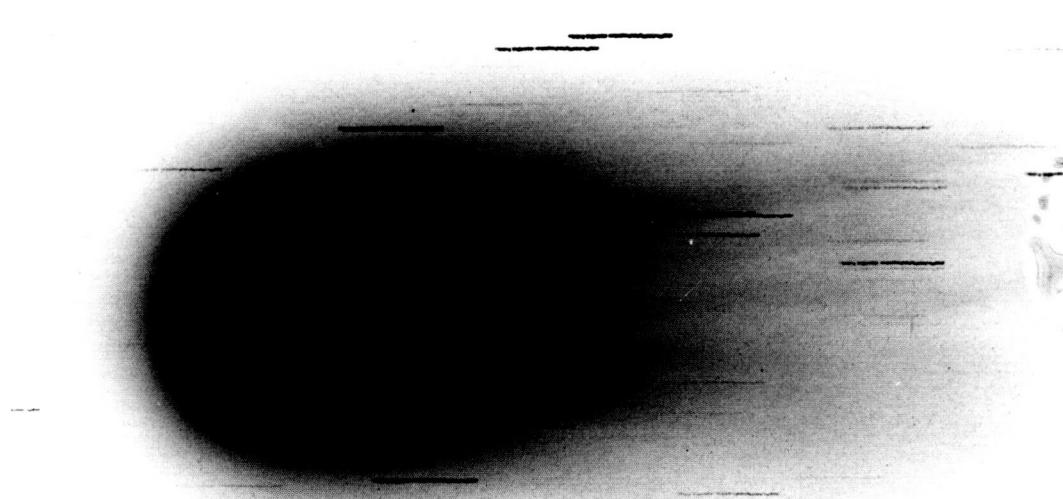


Figure 654-2. 1910 May 31.734; exposure 76 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 7.0$ E3

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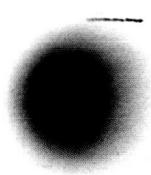


Figure 655-1. 1910 May 31.777; exposure 45 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 7.0 \text{ E}3$

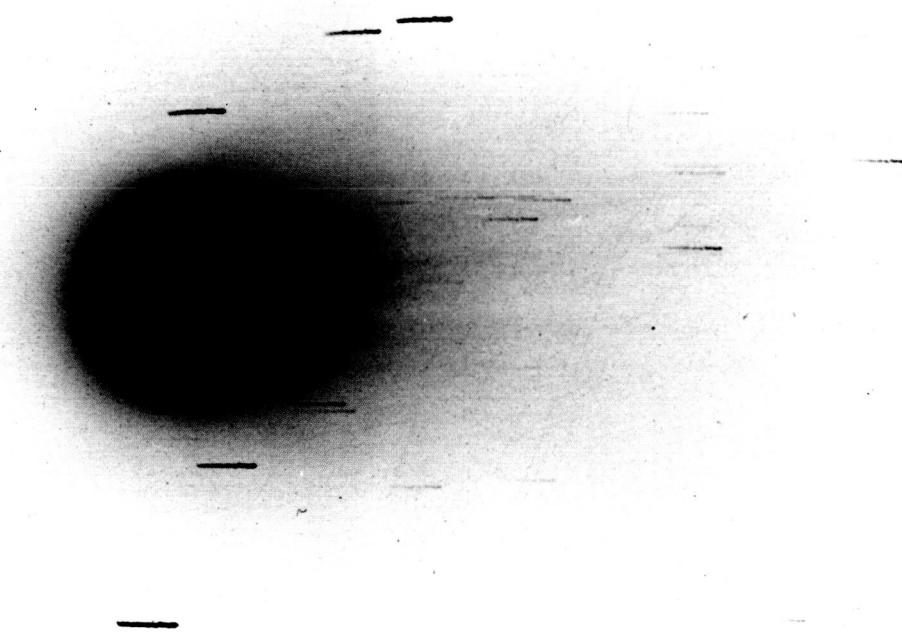


Figure 655-2. 1910 May 31.777; exposure 45 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, $S = 7.0 \text{ E}3$

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Figure 656a. 1910 May 31.791; exposure 8 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, S = 6.7 E3

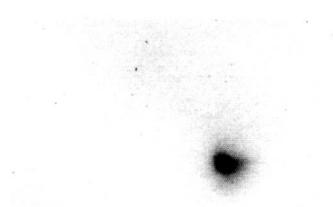


Figure 656b. 1910 May 31.791; exposure 3 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, S = 6.7 E3

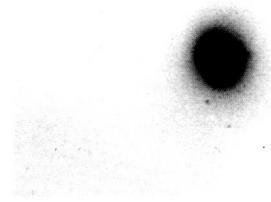


Figure 656c. 1910 May 31.791; exposure 3 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, S = 6.7 E3

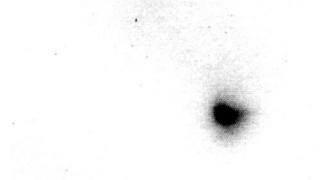
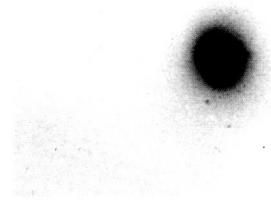


Figure 656d. 1910 May 31.791; exposure 3 minutes; $r = 1.04$, $\Delta = 0.49$, $\theta = 79^\circ$, $\alpha = 72^\circ$, S = 6.7 E3



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Figure 657. 1910 June 1.079; exposure 111 minutes; $r = 1.05$, $\Delta = 0.50$, $\theta = 79^\circ$, $\alpha = 71^\circ$, $S = 1.3 \text{ E}5$



Figure 658. 1910 June 1.079; exposure 111 minutes; $r = 1.05$, $\Delta = 0.50$, $\theta = 79^\circ$, $\alpha = 71^\circ$, $S = 1.6 \text{ E}5$

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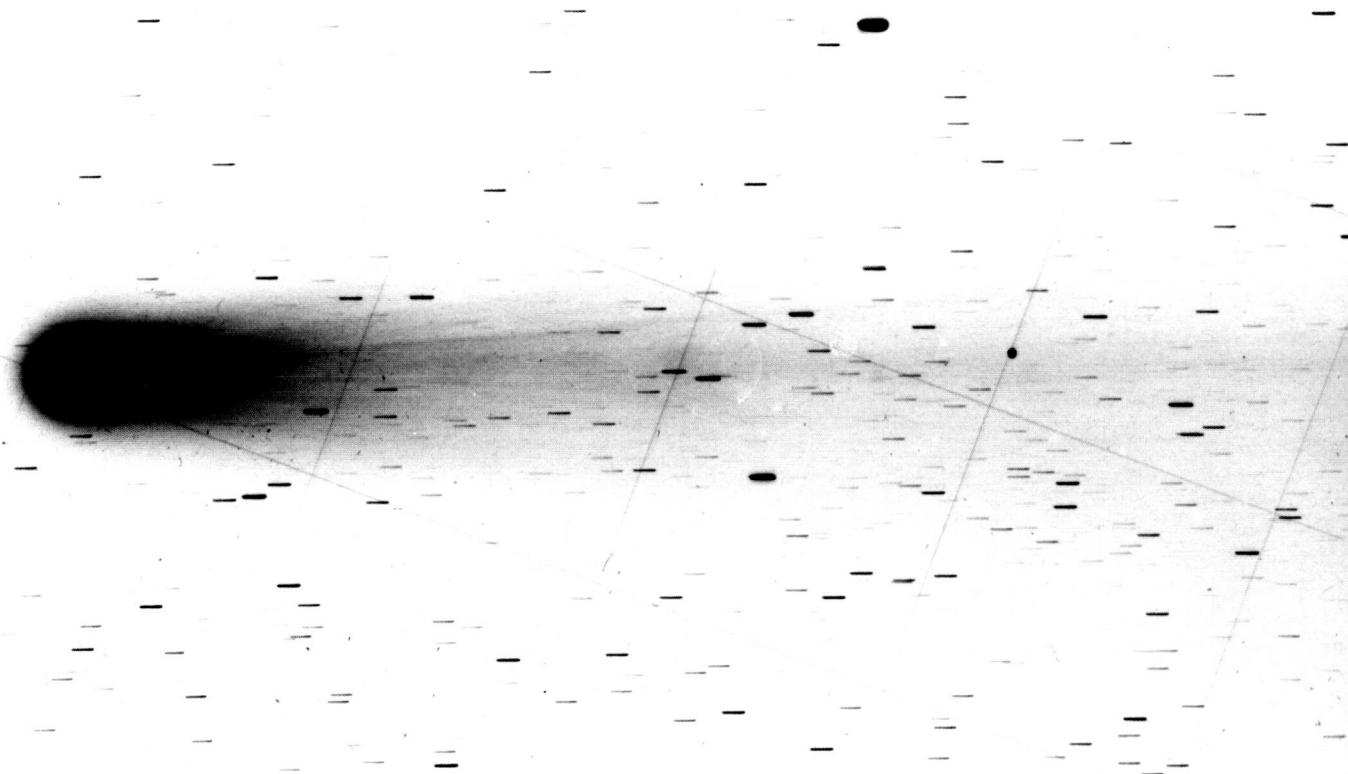
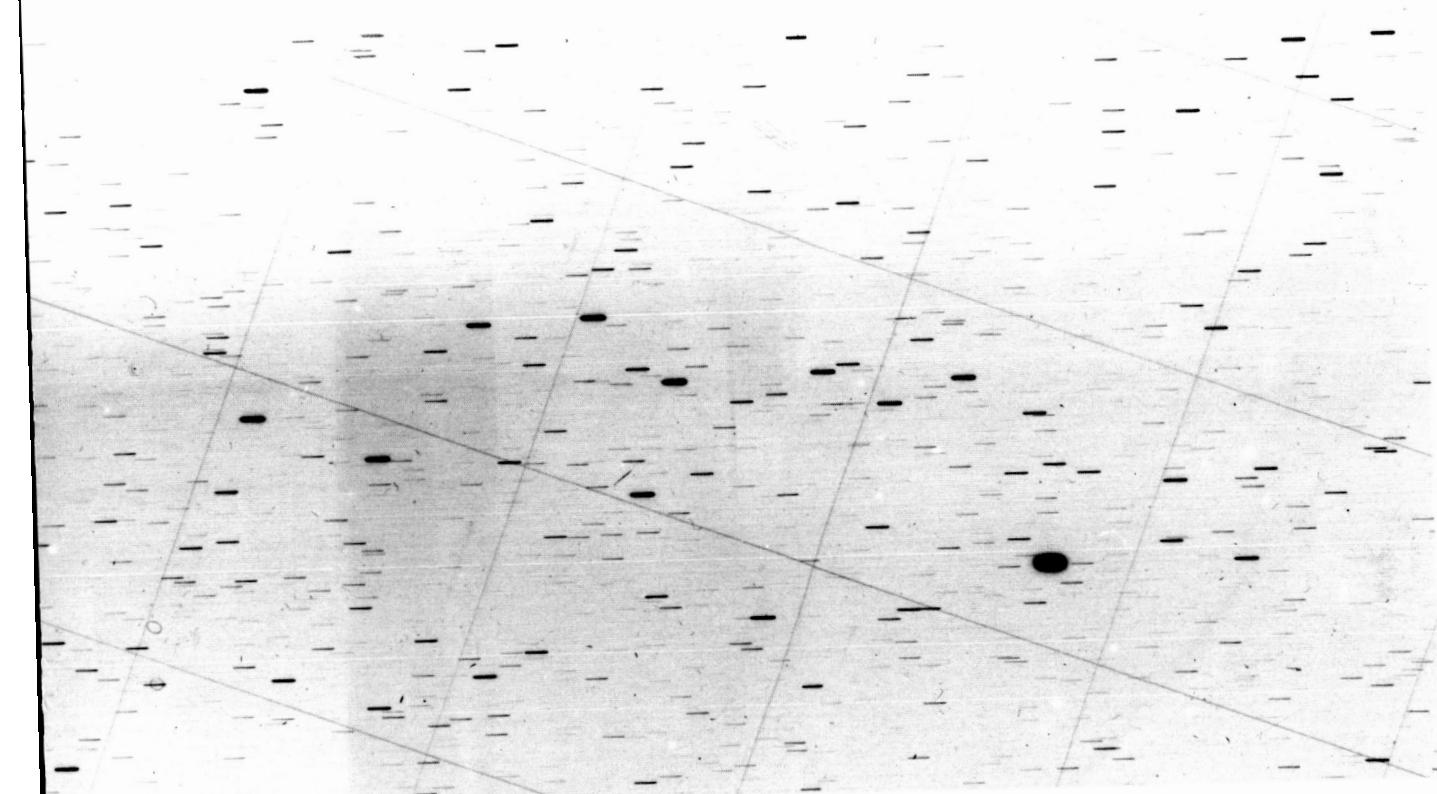


Figure 659. 1910 June 1.242; exposure 76 minutes; $r = 1.05$, $\Delta = 0.51$, $\theta = 79^\circ$, $\alpha = 71^\circ$, $S = 3.4 \text{ E}4$

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Figure 660-1. 1910 June 1.467; exposure 78 minutes; $r = 1.05$,
 $\Delta = 0.52$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 6.1 \text{ E}4$

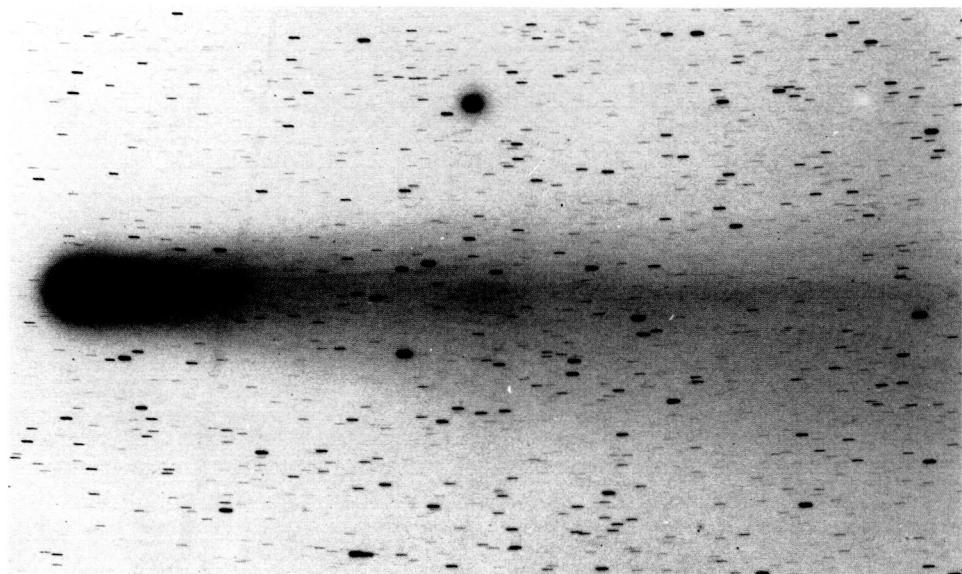


Figure 660-2. 1910 June 1.467; exposure 78 minutes; $r = 1.05$, $\Delta = 0.52$, $\theta = 80^\circ$,
 $\alpha = 70^\circ$, $S = 6.1 \text{ E}4$

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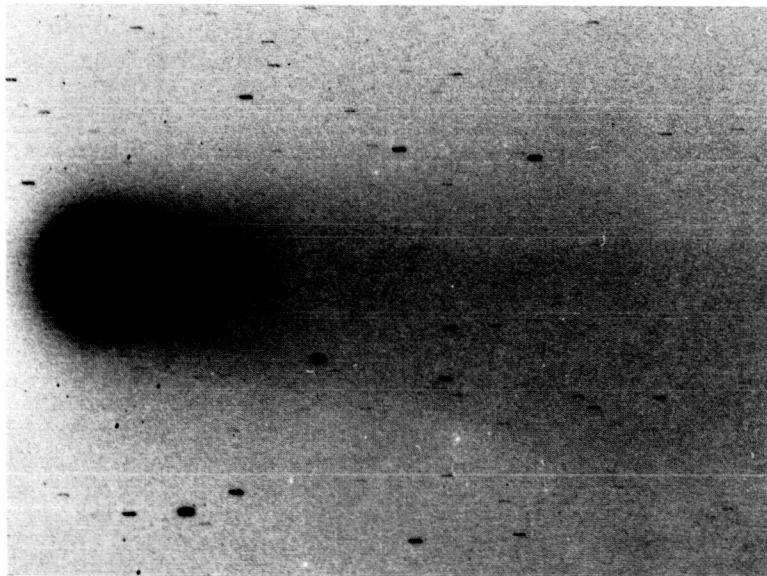


Figure 661. 1910 June 1.574; exposure 25 minutes; $r = 1.06$, $\Delta = 0.52$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 1.9 \text{ E}4$

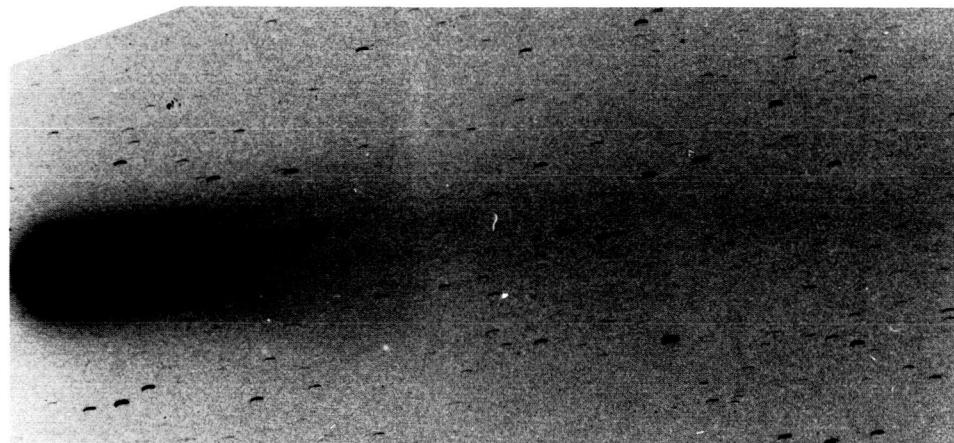


Figure 662. 1910 June 1.598; exposure 87 minutes; $r = 1.06$, $\Delta = 0.52$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 3.1 \text{ E}4$

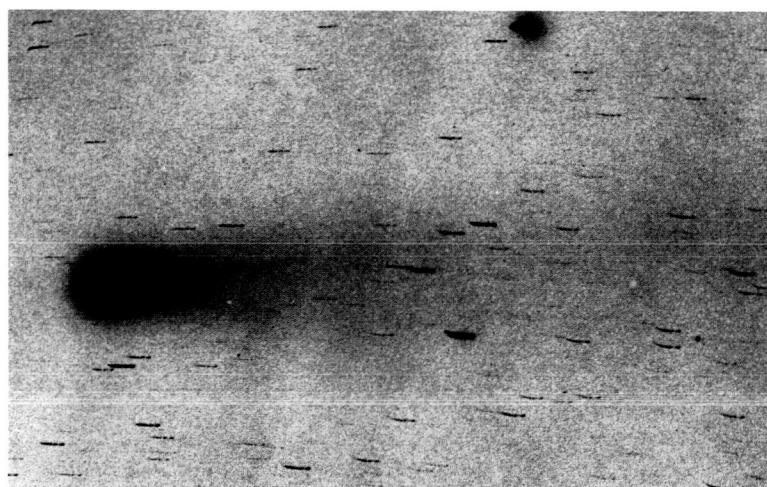


Figure 663. 1910 June 1.664; exposure 125 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 5.1 \text{ E}4$

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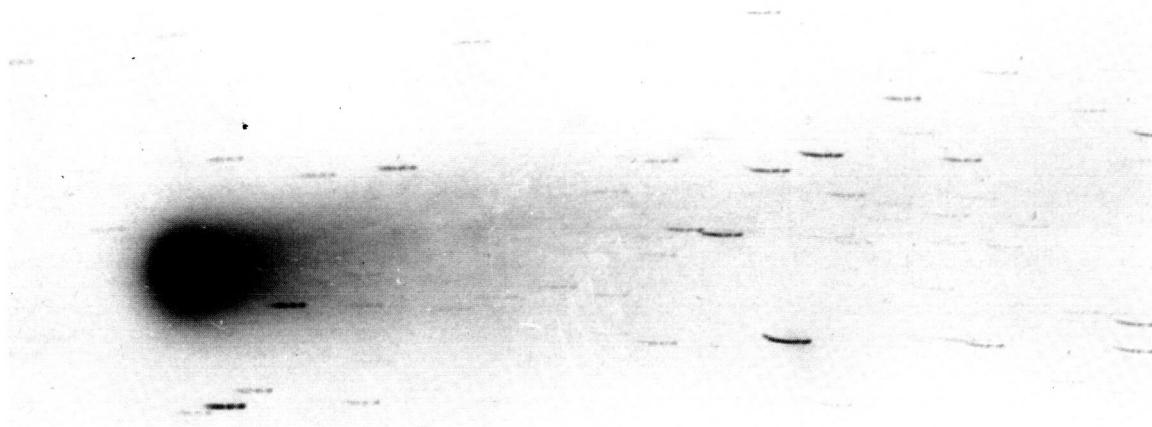


Figure 664-1. 1910 June 1.664; exposure 125 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 3.1 \text{ E}4$

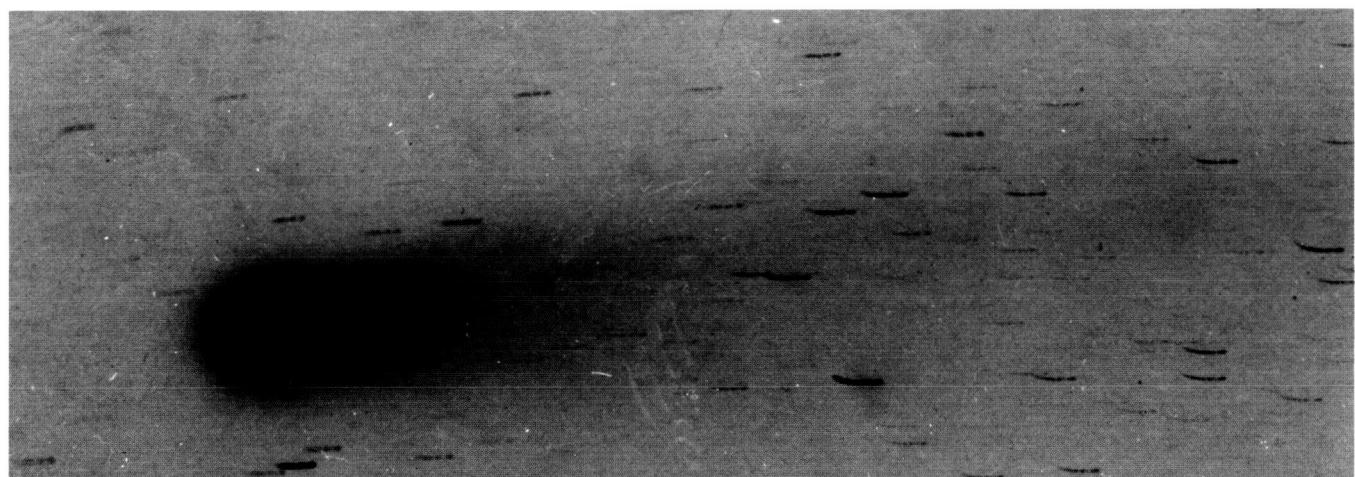


Figure 664-2. 1910 June 1.664; exposure 125 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 3.1 \text{ E}4$

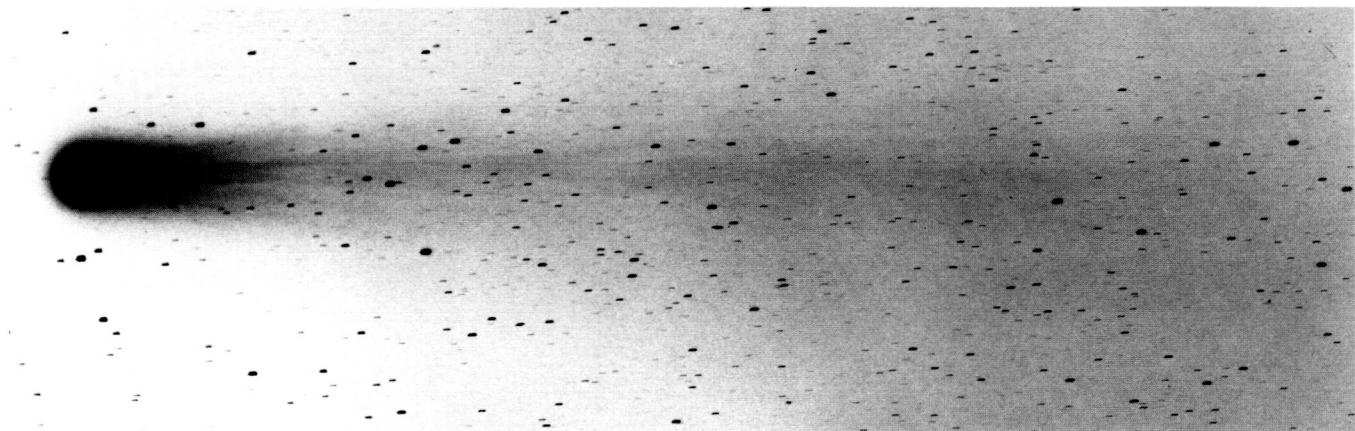


Figure 665. 1910 June 1.719; exposure 50 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 5.1 \text{ E}4$

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Figure 666-1. 1910 June 1.748; exposure 134 minutes; $r = 1.06$,
 $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, S = 6.1 E4

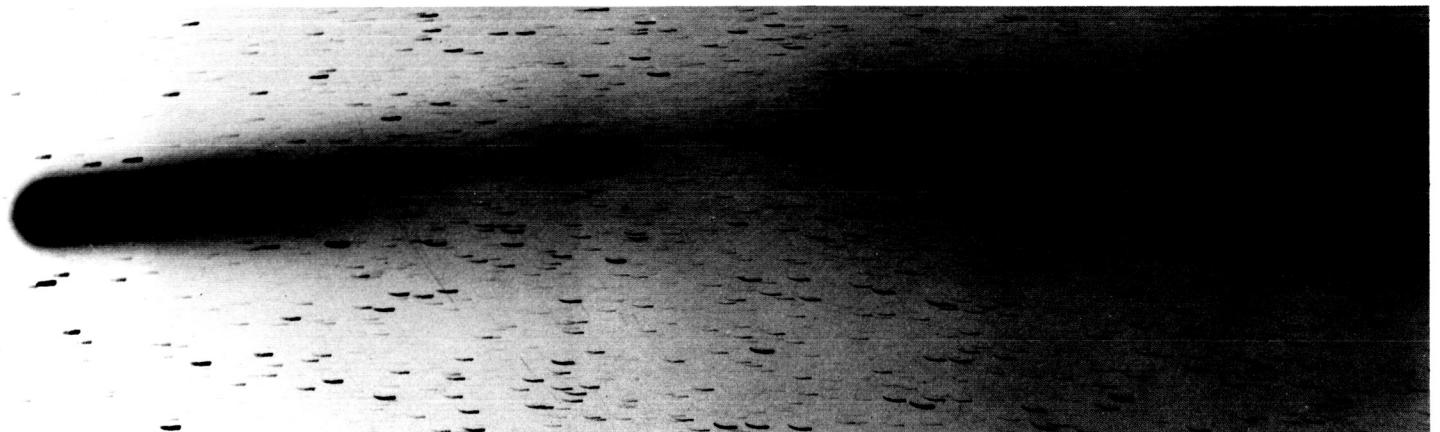


Figure 666-2. 1910 June 1.748; exposure 134 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, S = 6.1 E4

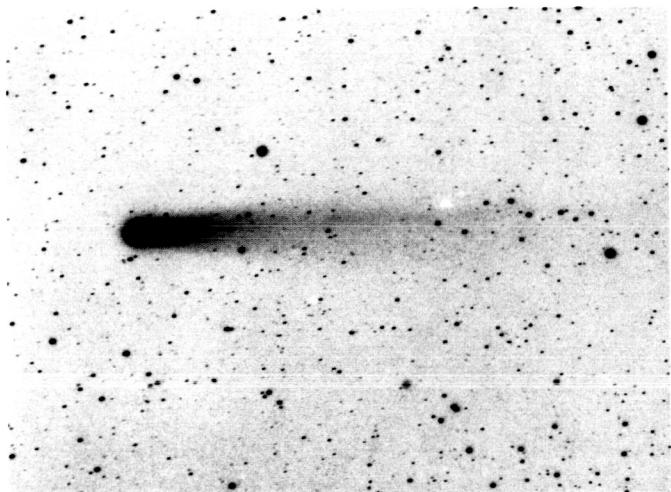


Figure 667. 1910 June 1.796; exposure 55 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, S = 1.6 E5

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Figure 668-1. 1910 June 1.480; exposure 120 minutes; $r = 1.05$,
 $\Delta = 0.52$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 1.1 \text{ E}4$

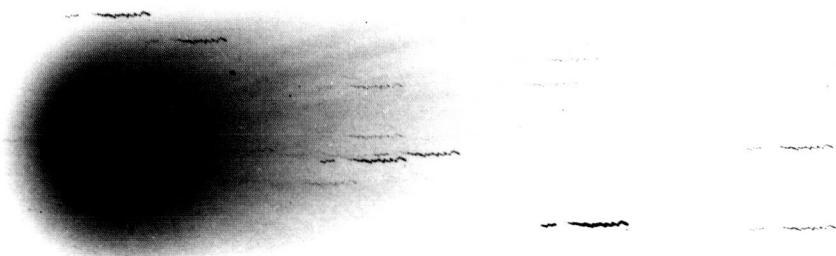


Figure 668-2. 1910 June 1.480; exposure 120 minutes; $r = 1.05$, $\Delta = 0.52$, $\theta = 80^\circ$,
 $\alpha = 70^\circ$, $S = 1.1 \text{ E}4$

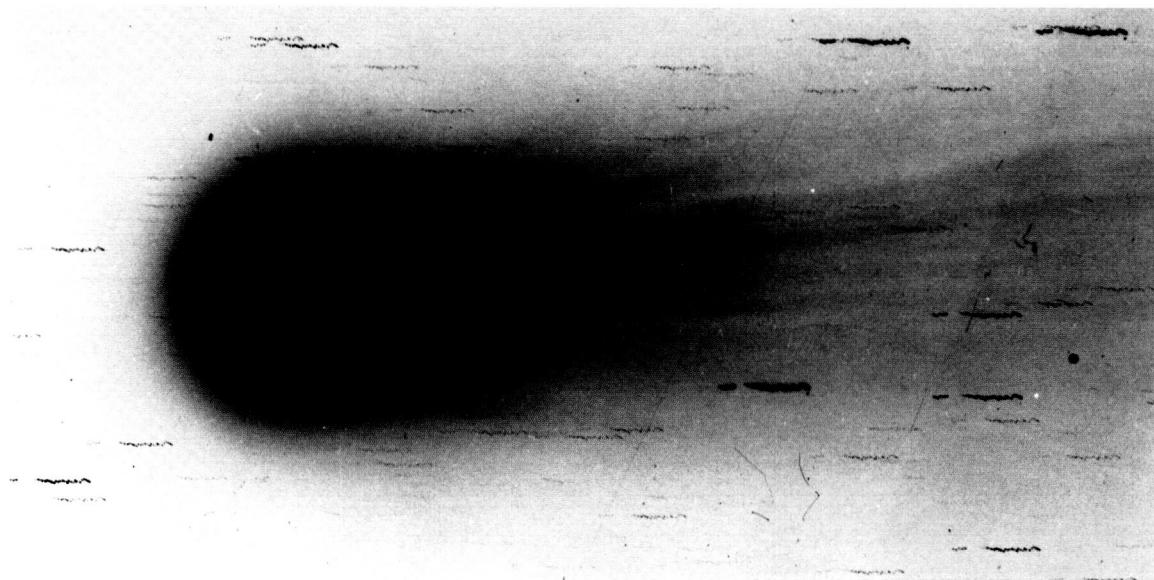


Figure 668-3. 1910 June 1.480; exposure 120 minutes; $r = 1.05$, $\Delta = 0.52$, $\theta = 80^\circ$, $\alpha = 70^\circ$,
 $S = 1.1 \text{ E}4$

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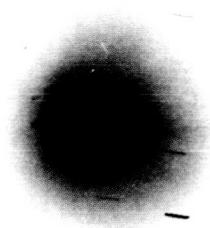


Figure 669-1. 1910
June 1.682; exposure 12
minutes; $r = 1.06$, $\Delta =$
 0.53 , $\theta = 80^\circ$, $\alpha = 70^\circ$,
 $S = 5.6$ E3



Figure 669-2. 1910
June 1.682; exposure 12
minutes; $r = 1.06$, $\Delta =$
 0.53 , $\theta = 80^\circ$, $\alpha = 70^\circ$,
 $S = 5.6$ E3

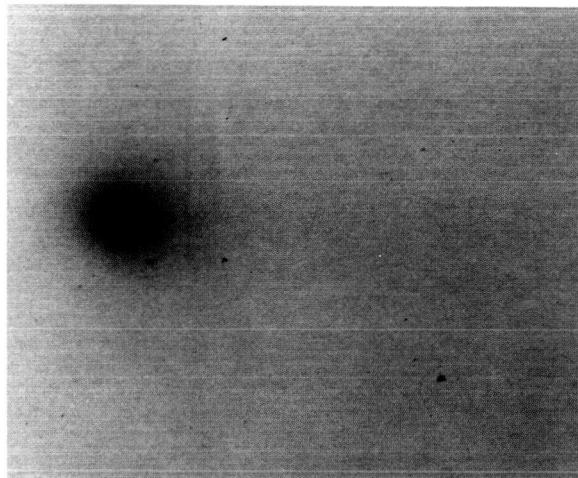


Figure 670-1. 1910 June 1.688; exposure 2 minutes;
 $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 7.5$ E3

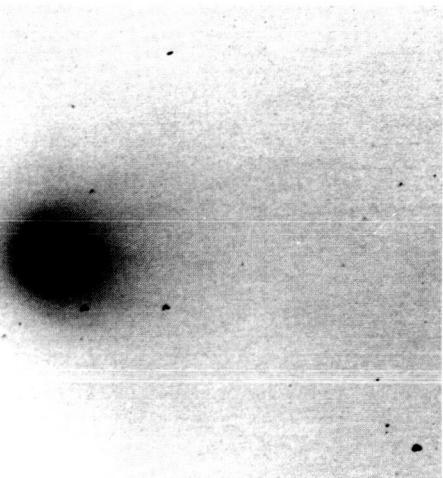


Figure 670-2. 1910 June 1.688; exposure 2 minutes;
 $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 7.5$ E3

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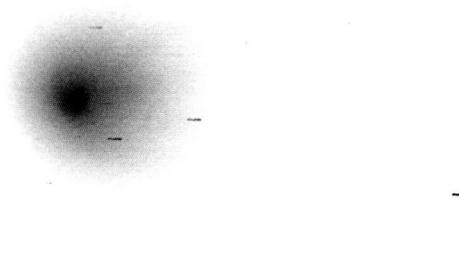


Figure 671-1. 1910 June 1.695; exposure 13 minutes; $r = 1.06$, $\Delta = 0.53$,
 $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 9.4$ E3

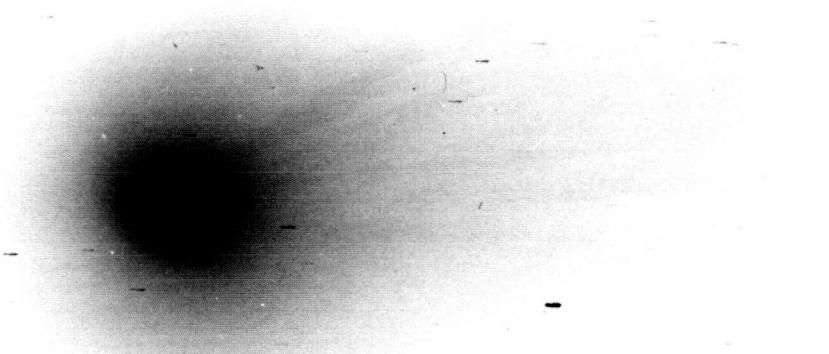


Figure 671-2. 1910 June 1.695; exposure 13 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, $S = 9.4$ E3

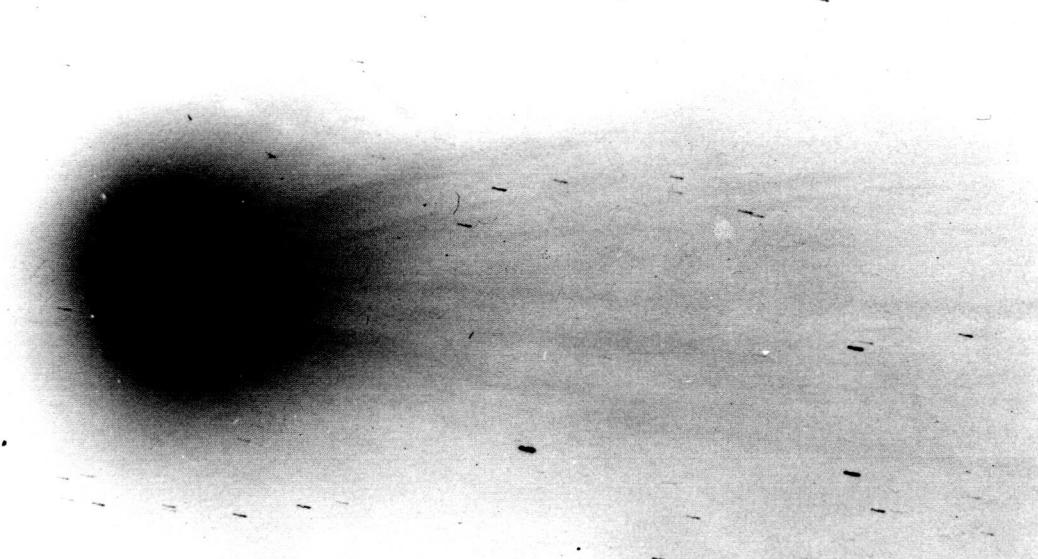


Figure 671-3. 1910 June 1.695; exposure 13 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$,
 $S = 9.4$ E3

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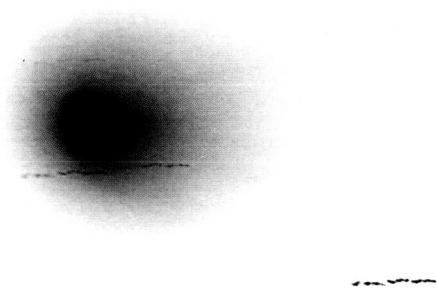


Figure 672-1. 1910 June 1.729; exposure 80 minutes; $r = 1.06$,
 $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, S = 9.4 E3



Figure 672-2. 1910 June 1.729; exposure 80 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, S = 9.4 E3

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Figure 673-1. 1910 June 1.760; exposure 6 minutes;
 $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, S = 9.5 E3

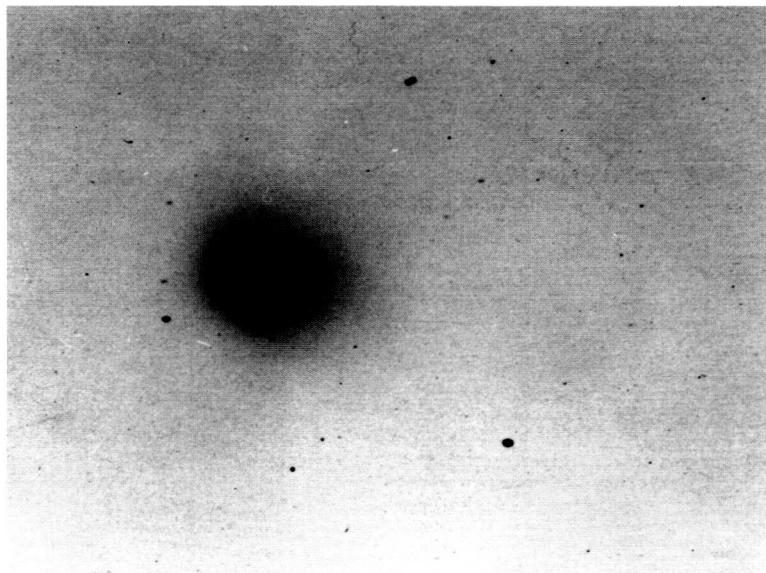


Figure 673-2. 1910 June 1.760; exposure 6 minutes; $r = 1.06$, $\Delta = 0.53$, $\theta = 80^\circ$, $\alpha = 70^\circ$, S = 9.5 E3

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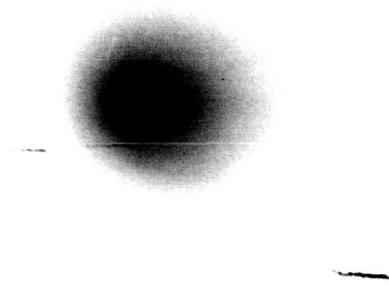


Figure 674-1. 1910 June 1.779; exposure 44 minutes; $r = 1.06$,
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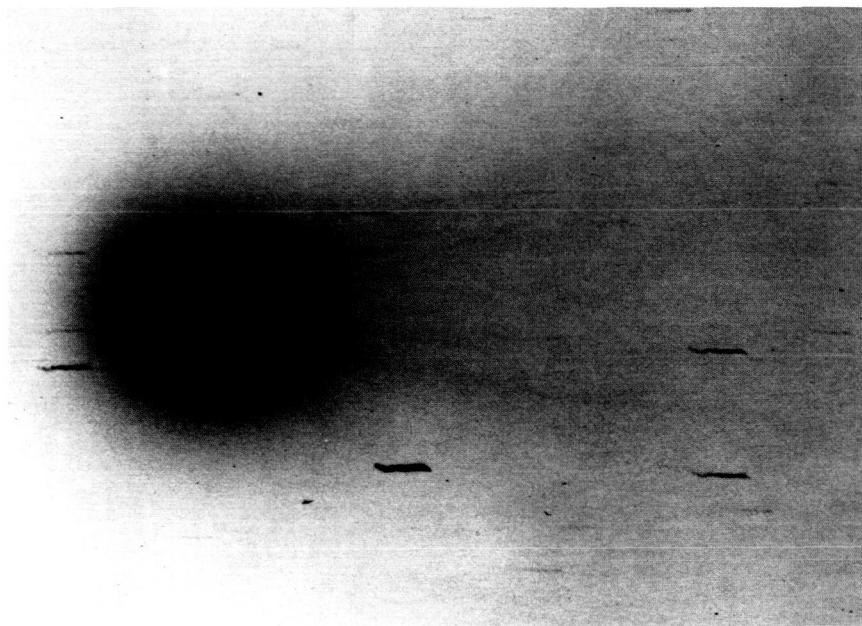


Figure 674-2. 1910 June 1.779; exposure 44 minutes; $r = 1.06$, $\Delta = 0.53$,
 $\theta = 80^\circ$, $\alpha = 70^\circ$, S = 7.6 E3

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Figure 675. 1910 June 2.597; exposure 74 minutes; $r = 1.07$, $\Delta = 0.56$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 3.3 \text{ E}4$



Figure 676. 1910 June 2.635; exposure 90 minutes; $r = 1.07$, $\Delta = 0.56$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 4.2 \text{ E}4$

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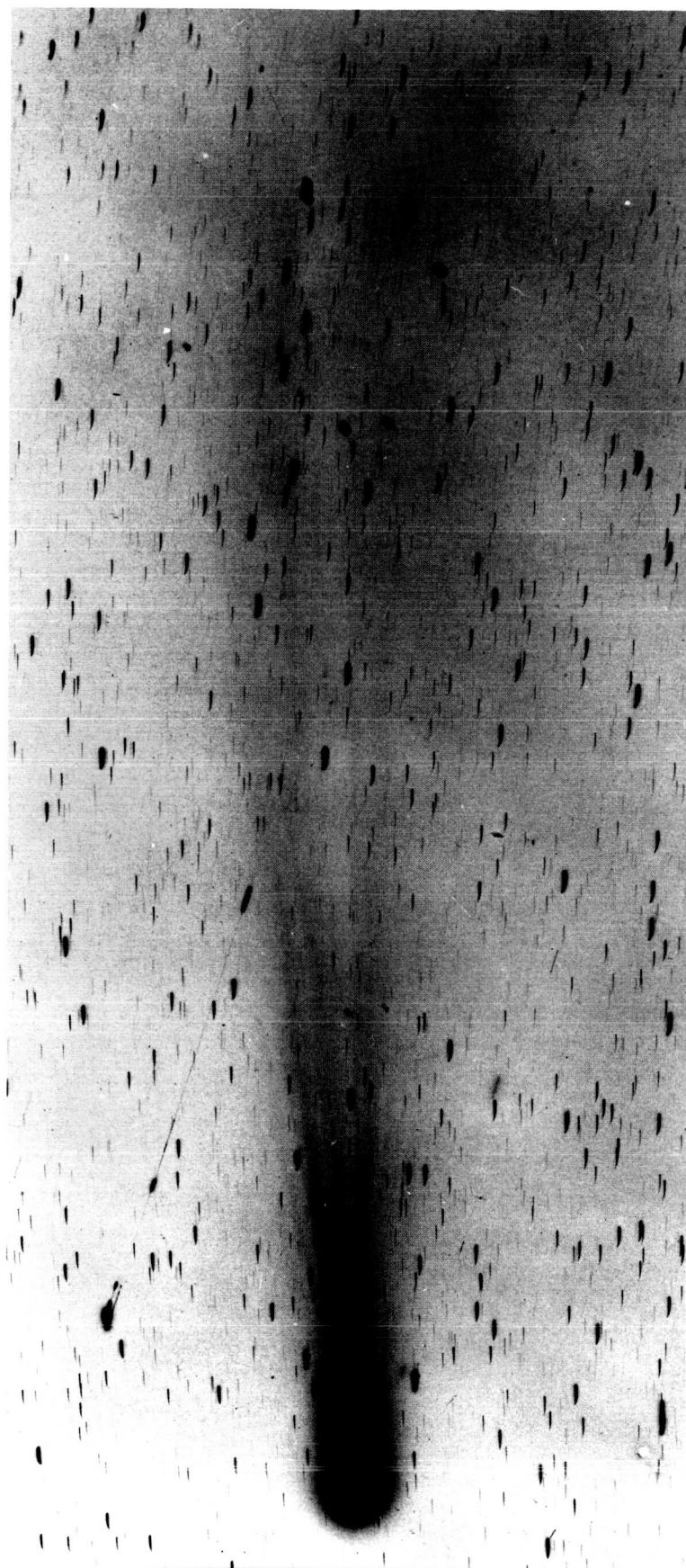


Figure 677. 1910 June 2.722; exposure 119 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 0.57$, $\alpha = 80^\circ$, $\delta = 68^\circ$, $S = 4.8$ E4

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Figure 678. 1910 June 2.723; exposure 121 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 1.6 E5$

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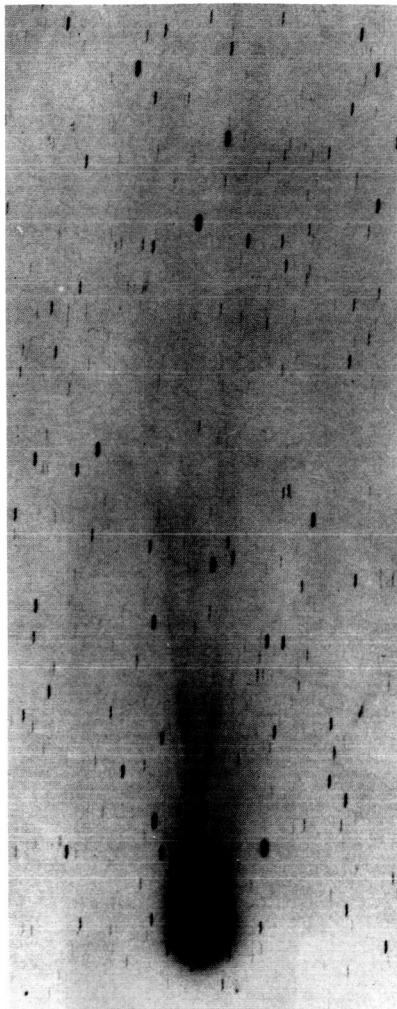


Figure 679-1. 1910 June 2.748; exposure 131 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 6.5 \text{ E}4$

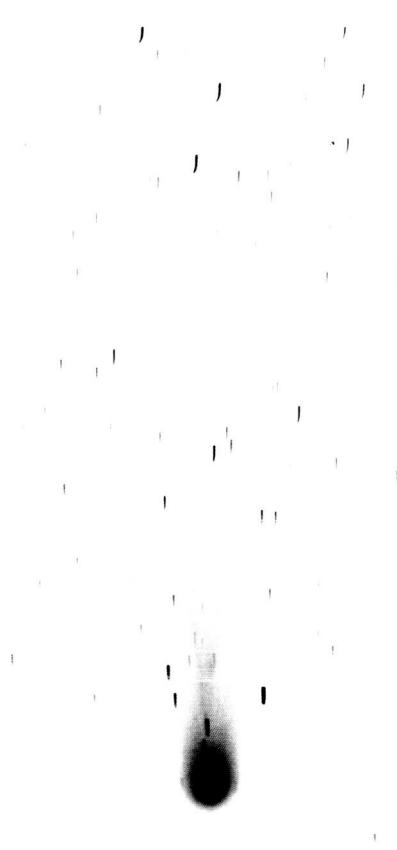


Figure 680. 1910 June 2.813; exposure 62 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 5.3 \text{ E}4$

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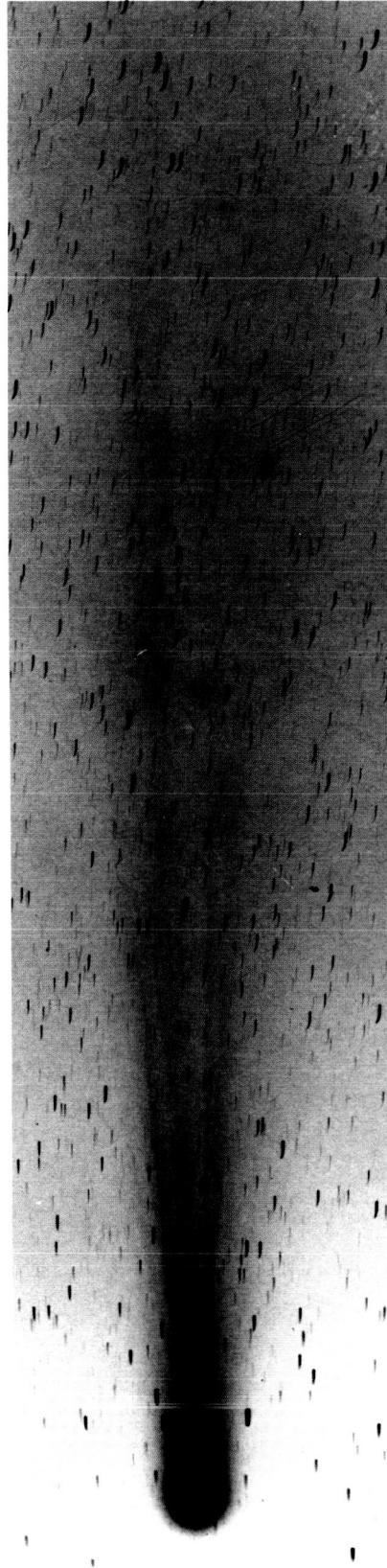


Figure 679-2. 1910 June 2.748; exposure 131 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 6.5 \text{ E}4$

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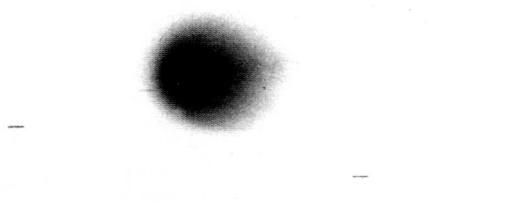


Figure 681-1. 1910 June 2.276; exposure 20 minutes; $r = 1.07$, $\Delta = 0.55$, $\theta = 80^\circ$, $\alpha = 69^\circ$, $S = 1.2 \text{ E}4$

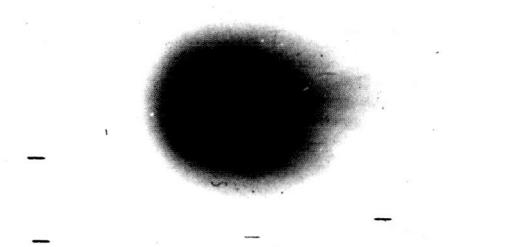


Figure 681-2. 1910 June 2.276; exposure 20 minutes; $r = 1.07$, $\Delta = 0.55$, $\theta = 80^\circ$, $\alpha = 69^\circ$, $S = 1.2 \text{ E}4$

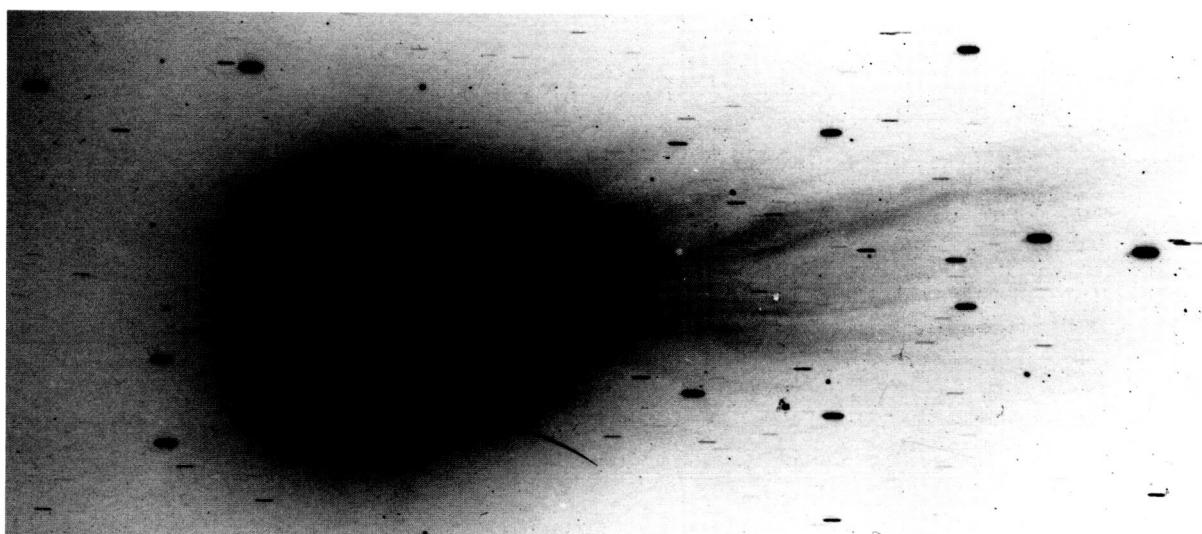


Figure 681-3. 1910 June 2.276; exposure 30 minutes; $r = 1.07$, $\Delta = 0.55$, $\theta = 80^\circ$, $\alpha = 79^\circ$, $S = 1.2 \text{ E}4$

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Figure 682-1. 1910 June 2.342; exposure
10 minutes; $r = 1.07$, $\Delta = 0.55$, $\theta = 80^\circ$,
 $\alpha = 68^\circ$, $S = 1.2 \text{ E}4$

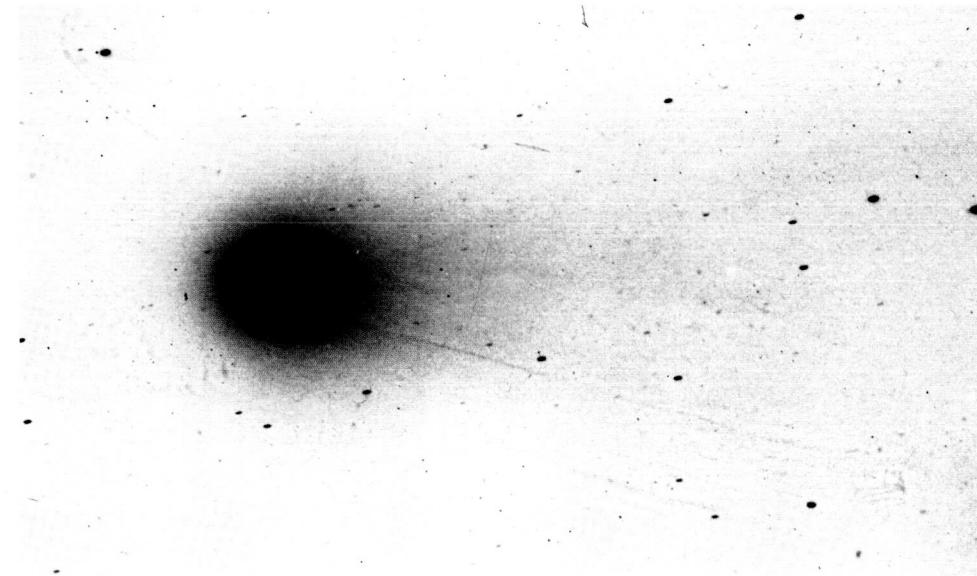


Figure 682-2. 1910 June 2.342; exposure 10 minutes; $r = 1.07$, $\Delta = 0.55$, $\theta = 80^\circ$,
 $\alpha = 68^\circ$, $S = 1.2 \text{ E}4$

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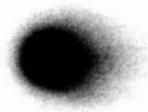


Figure 683-1. 1910 June 2.577; exposure
32 minutes; $r = 1.07$, $\Delta = 0.56$, $\theta = 80^\circ$,
 $\alpha = 68^\circ$, $S = 2.0$ E4

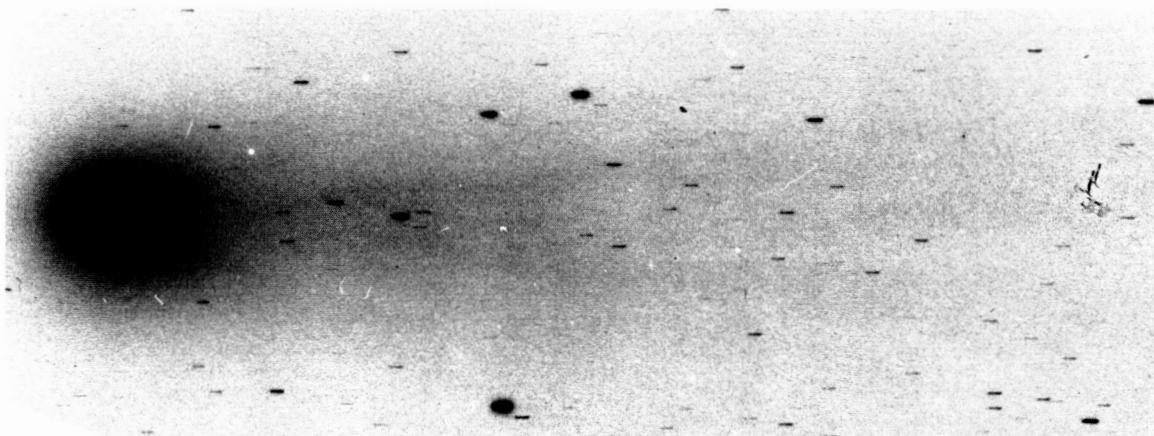


Figure 683-2. 1910 June 2.577; exposure 32 minutes; $r = 1.07$, $\Delta = 0.56$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 2.0$ E4

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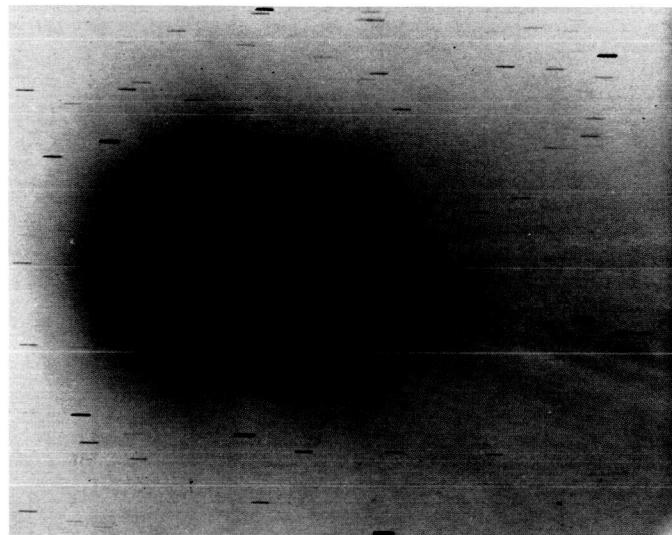


Figure 684. 1910 June 2.682; exposure 25 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 1.1 \text{ E}4$

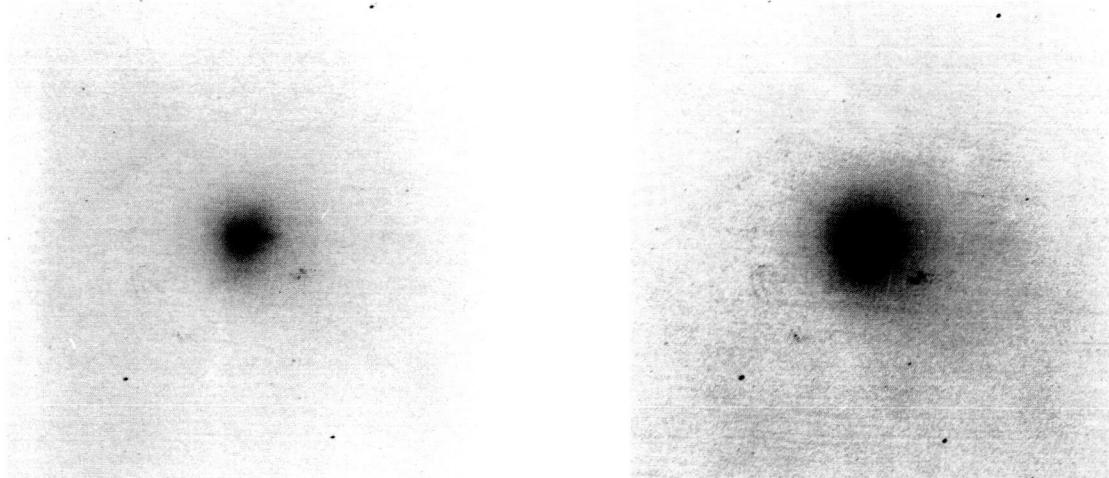


Figure 685-1. 1910 June 2.688; exposure 2 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 8.1 \text{ E}3$

Figure 685-2. 1910 June 2.688; exposure 2 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 8.1 \text{ E}3$

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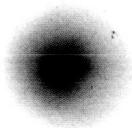


Figure 686-1. 1910 June 2.695; exposure 14 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 1.0 E4$



Figure 686-2. 1910 June 2.695; exposure 14 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 1.0 E4$

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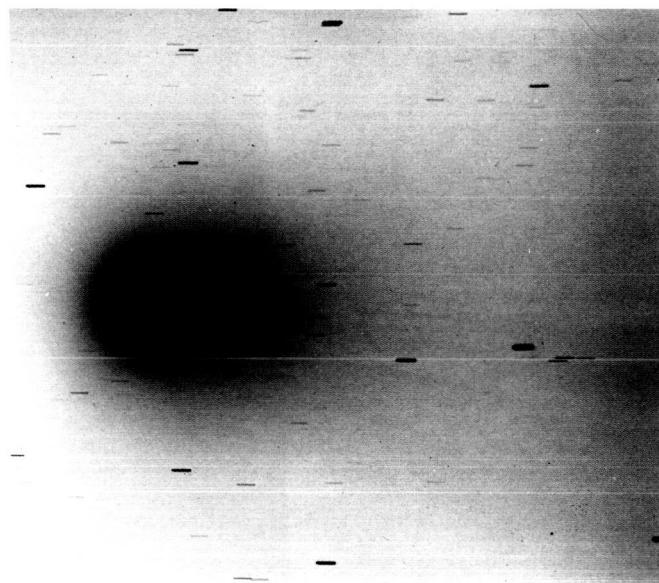


Figure 687-1. 1910 June 2.729; exposure 25 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 5.6 \text{ E}3$

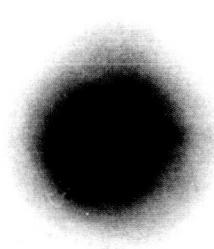


Figure 687-2. 1910 June 2.729; exposure 25 minutes; $r = 1.07$. $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 5.6 \text{ E}3$

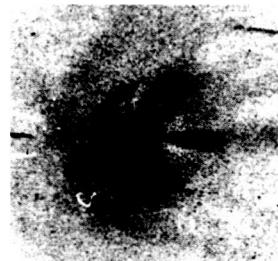


Figure 687-3. 1910 June 2.729; exposure 25 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 1.1 \text{ E}4$

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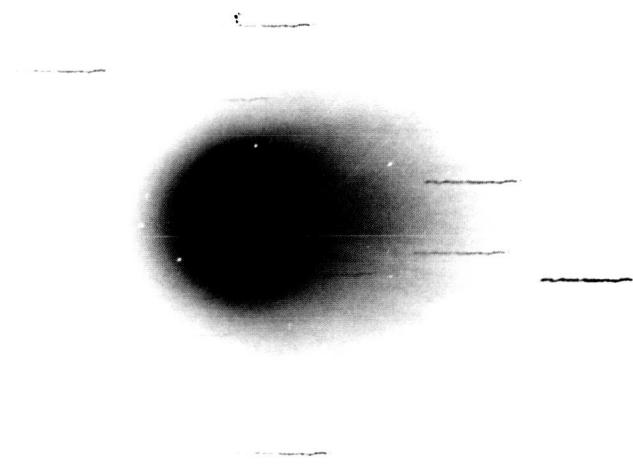


Figure 688-1. 1910 June 2.733; exposure 90 minutes;
 $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 8.1 \text{ E}3$

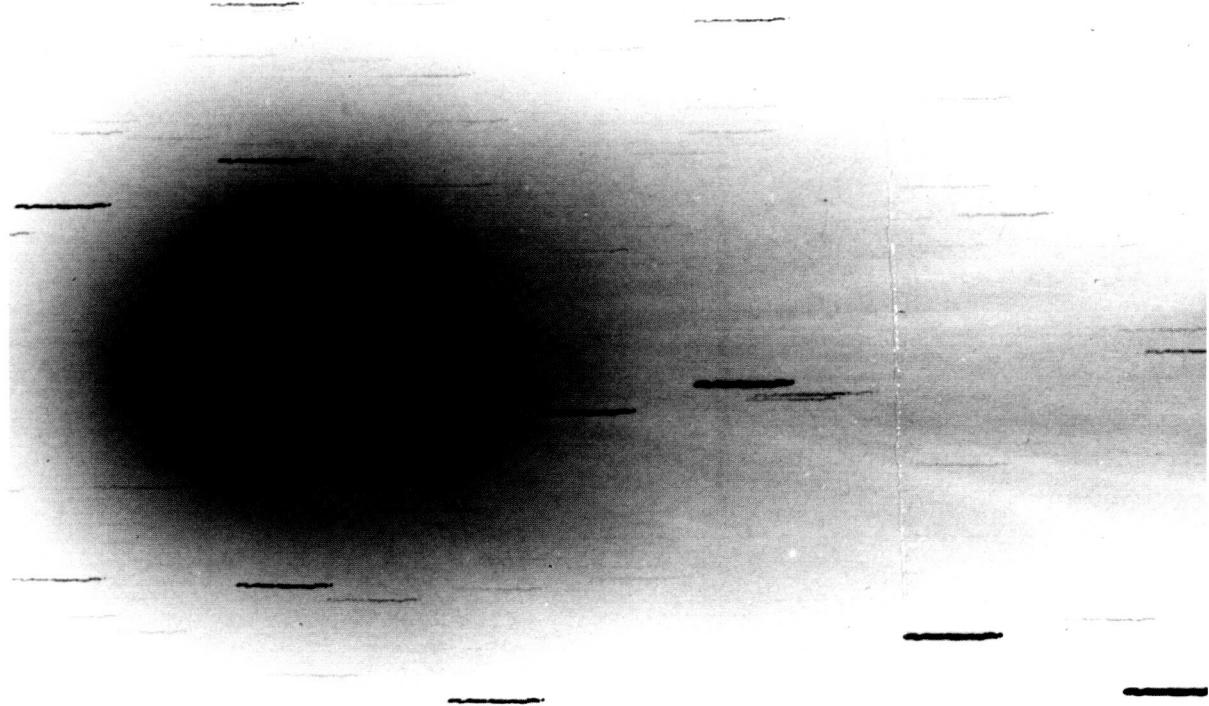


Figure 688-2. 1910 June 2.733; exposure 90 minutes; $r = 1.07$, $\Delta = 0.57$, $\theta = 80^\circ$, $\alpha = 68^\circ$, $S = 8.1 \text{ E}3$

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Figure 689-1. 1910 June 2.778; exposure 40 minutes;
 $r = 1.07, \Delta = 0.57, \theta = 80^\circ, \alpha = 68^\circ, S = 8.1 E3$

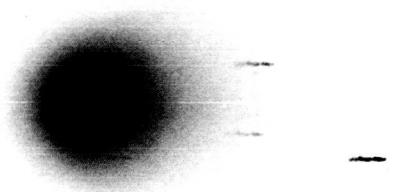


Figure 689-2. 1910 June 2.778; exposure 40 minutes;
 $r = 1.07, \Delta = 0.57, \theta = 80^\circ, \alpha = 68^\circ, S = 8.1 E3$

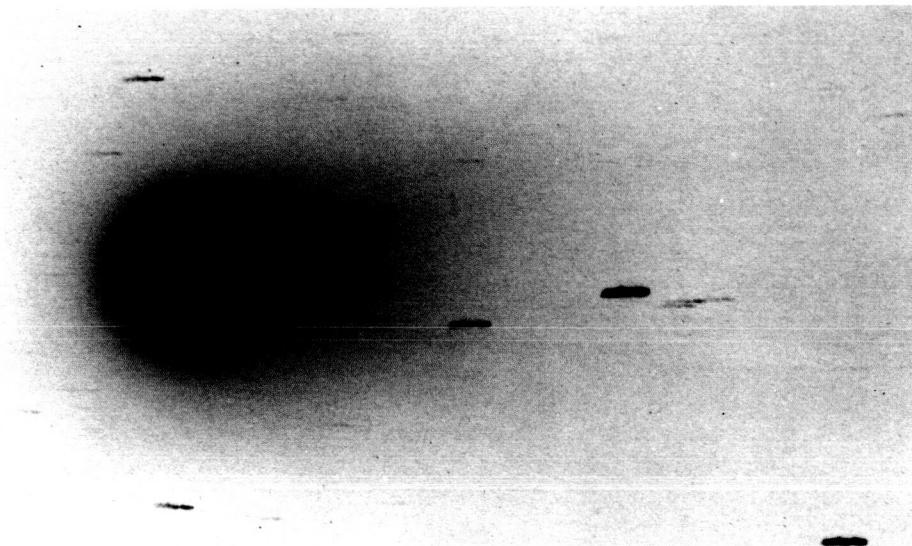


Figure 689-3. 1910 June 2.778; exposure 40 minutes; $r = 1.07, \Delta = 0.57, \theta = 80^\circ, \alpha = 68^\circ, S = 8.1 E3$

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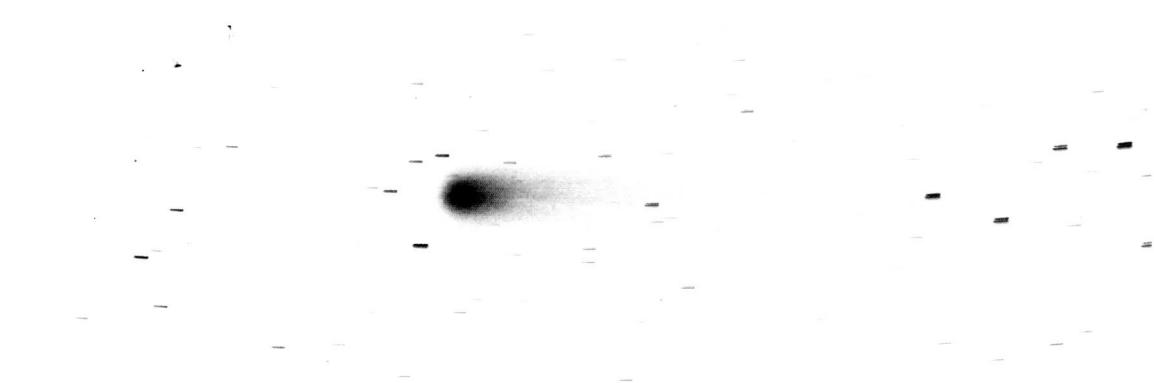


Figure 690-1. 1910 June 3.488; exposure 121 minutes; $r = 1.08$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$, $S = 7.0 \text{ E}4$

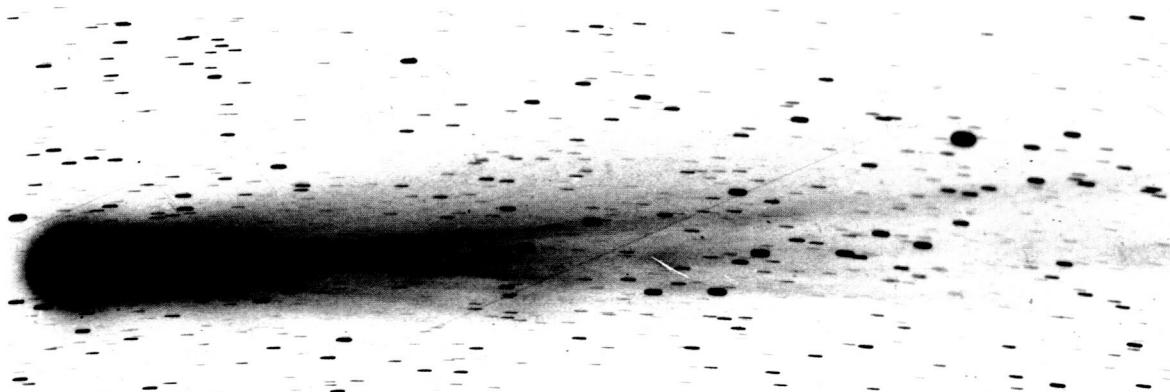


Figure 690-2. 1910 June 3.488; exposure 121 minutes; $r = 1.08$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$, $S = 7.0 \text{ E}4$

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Figure 691-1. 1910 June 3.543; exposure 30 minutes; $r = 1.09$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$,
 $S = 7.0 \text{ E}4$

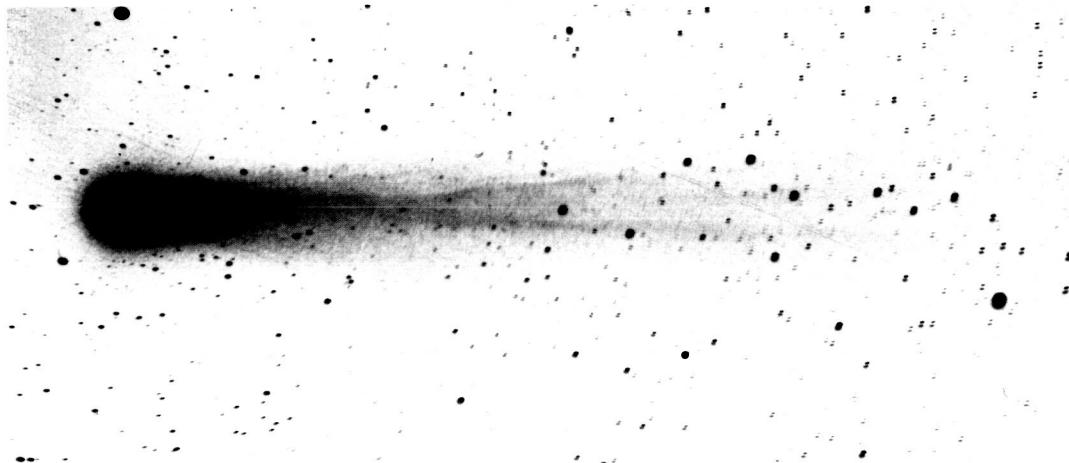


Figure 691-2. 1910 June 3.543; exposure 30 minutes; $r = 1.09$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$,
 $S = 7.0 \text{ E}4$

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Figure 692-1. 1910 June 3.748; exposure 131 minutes; $r = 1.09$, $\Delta = 0.61$, $\theta = 80^\circ$, $\alpha = 66^\circ$,
 $S = 7.0 \text{ E}4$

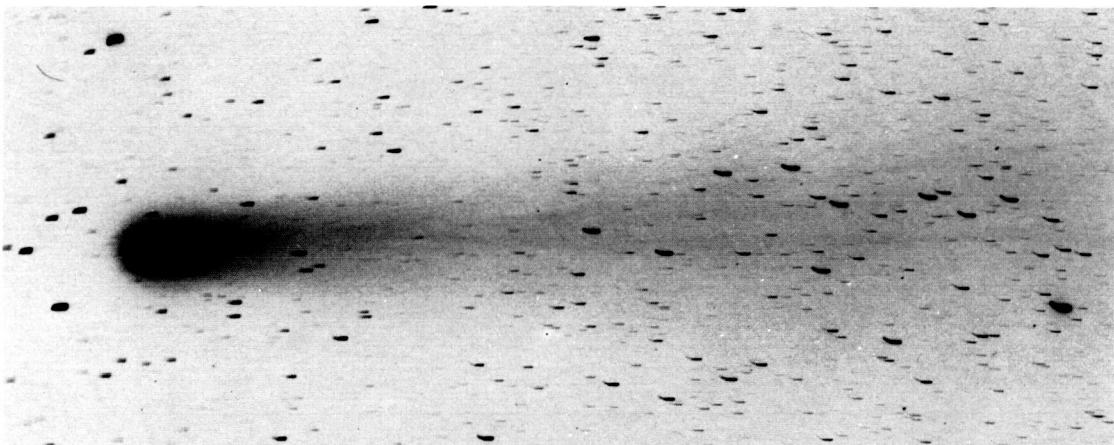


Figure 692-2. 1910 June 3.748; exposure 131 minutes; $r = 1.09$, $\Delta = 0.61$, $\theta = 80^\circ$, $\alpha = 66^\circ$,
 $S = 7.0 \text{ E}4$

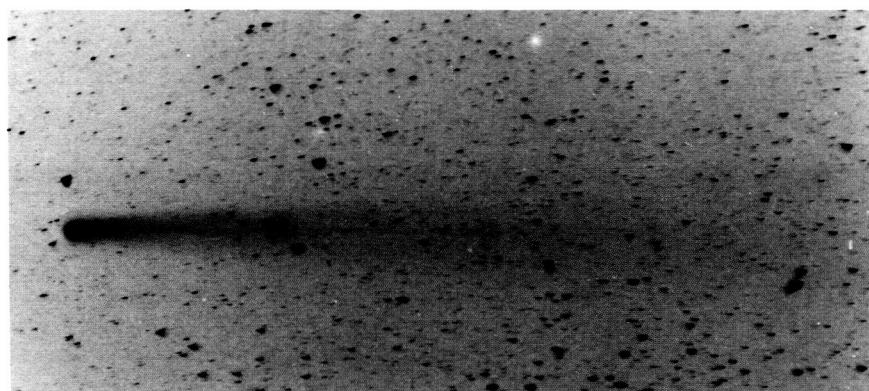


Figure 693. 1910 June 3.748; exposure 131 minutes; $r = 1.09$, $\Delta = 0.61$,
 $\theta = 80^\circ$, $\alpha = 66^\circ$, $S = 2.9 \text{ E}5$

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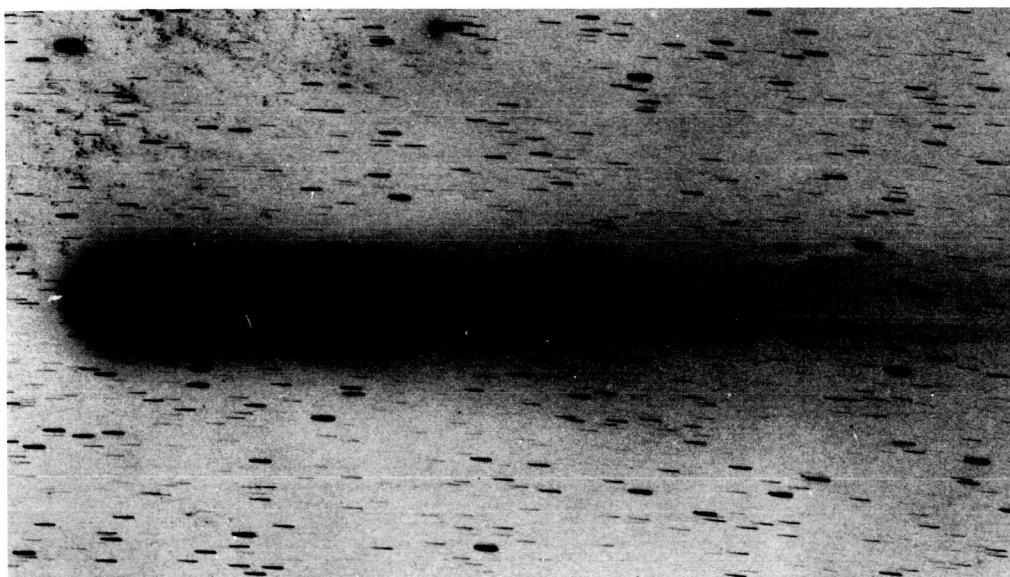


Figure 694. 1910 June 3.816; exposure 153 minutes; $r = 1.09$, $\Delta = 0.61$, $\theta = 80^\circ$, $\alpha = 66^\circ$, $S = 5.7 \text{ E}4$

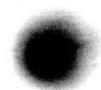


Figure 695-1. 1910 June 3.260; exposure 5 minutes;
 $r = 1.08$, $\Delta = 0.59$, $\theta = 80^\circ$, $\alpha = 67^\circ$, $S = 1.3 \text{ E}4$

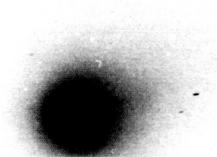


Figure 695-2. 1910 June 3.260; exposure 5 minutes;
 $r = 1.08$, $\Delta = 0.59$, $\theta = 80^\circ$, $\alpha = 67^\circ$, $S = 1.3 \text{ E}4$

ATLAS OF COMET HALLEY 1910 II

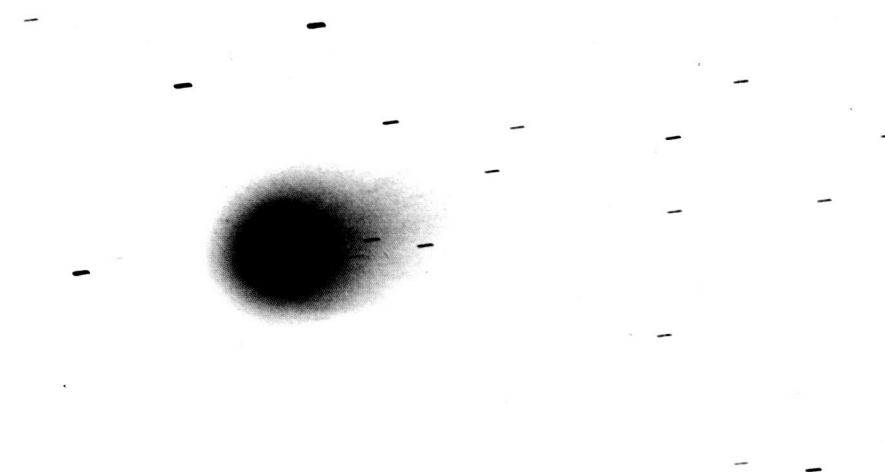


Figure 696-1. 1910 June 3.289; exposure 20 minutes; $r = 1.08$, $\Delta = 0.59$, $\theta = 80^\circ$, $\alpha = 67^\circ$, S = 1.3 E4

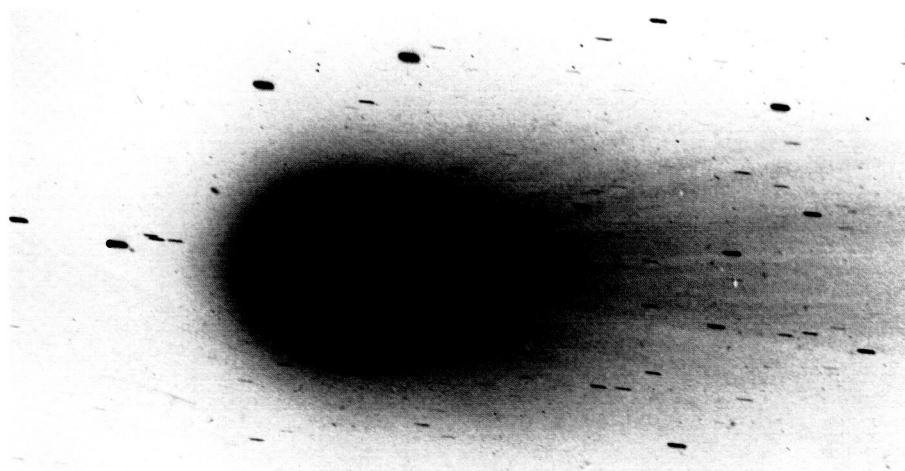


Figure 696-2. 1910 June 3.289; exposure 20 minutes; $r = 1.08$, $\Delta = 0.59$, $\theta = 80^\circ$, $\alpha = 67^\circ$, S = 1.3 E4

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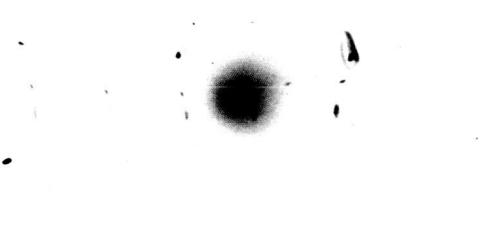


Figure 697-1. 1910 June 3.337; exposure 10 minutes;
 $r = 1.08$, $\Delta = 0.59$, $\theta = 80^\circ$, $\alpha = 67^\circ$, S = 1.3 E4

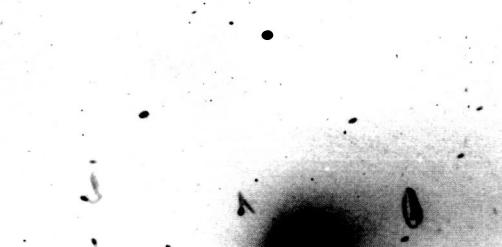


Figure 697-2. 1910 June 3.337; exposure 10 minutes; $r = 1.08$, $\Delta = 0.59$, $\theta = 80^\circ$, $\alpha = 67^\circ$, S = 1.3 E4

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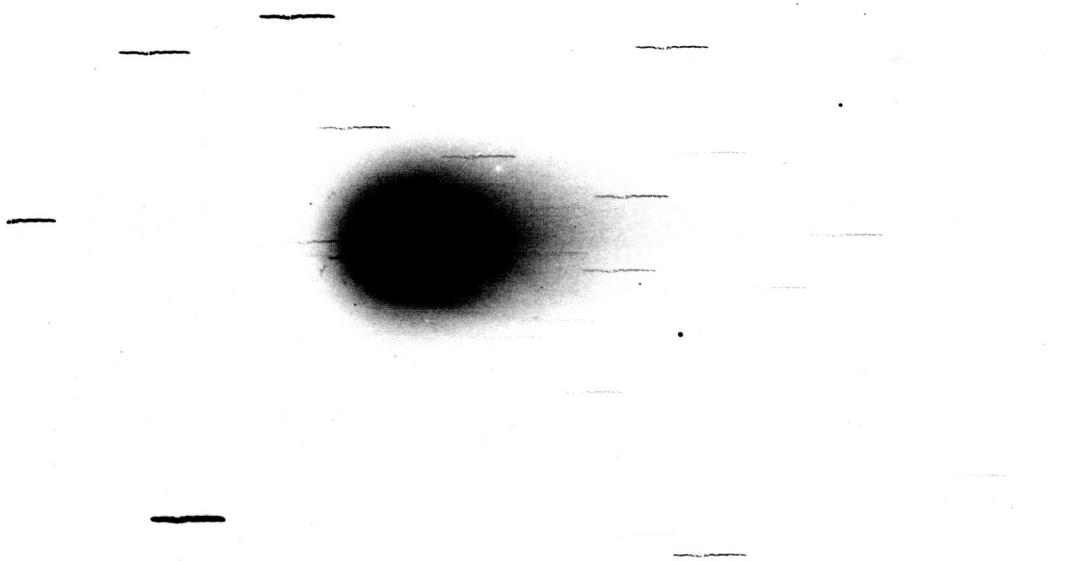


Figure 698-1. 1910 June 3.492; exposure 120 minutes; $r = 1.08$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$, $S = 1.3 E4$

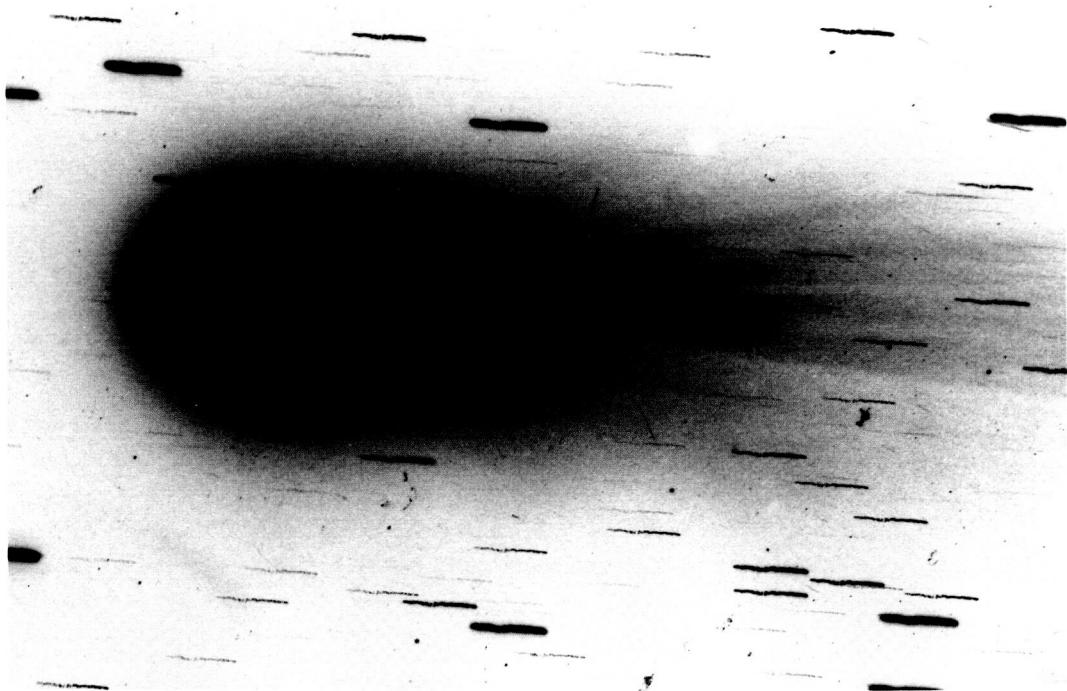


Figure 698-2. 1910 June 3.492; exposure 120 minutes; $r = 1.08$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$, $S = 1.3 E4$

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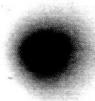


Figure 699-1. 1910 June 3.690; exposure 3 minutes; $r = 1.09$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$, S = 8.6 E3

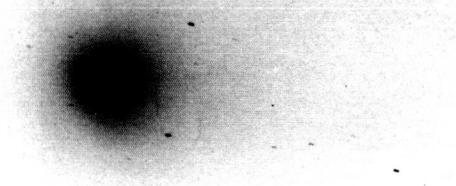


Figure 699-2. 1910 June 3.690; exposure 3 minutes; $r = 1.09$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$, S = 8.6 E3

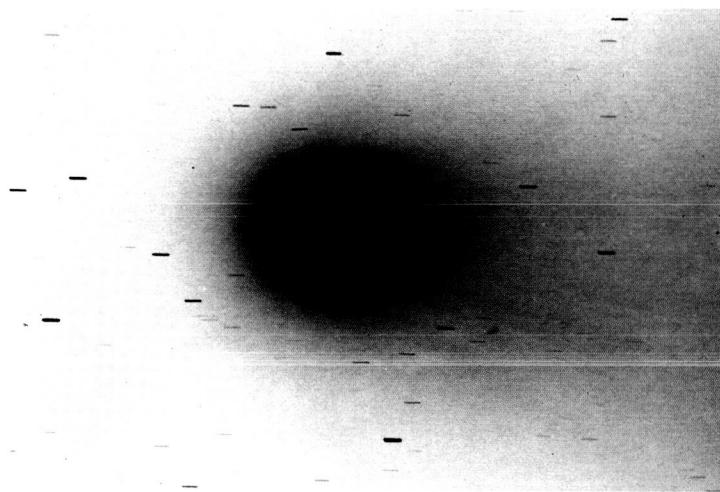


Figure 700. 1910 June 3.691; exposure 25 minutes; $r = 1.09$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$, S = 1.2 E4

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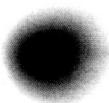


Figure 701-1. 1910 June 3.696; exposure 14 minutes; $r = 1.09$,
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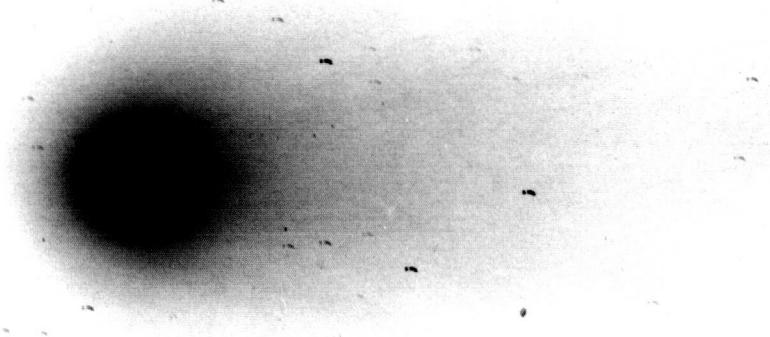


Figure 701-2. 1910 June 3.696; exposure 14 minutes; $r = 1.09$, $\Delta = 0.60$, $\theta = 80^\circ$,
 $\alpha = 66^\circ$, S = 8.6 E3

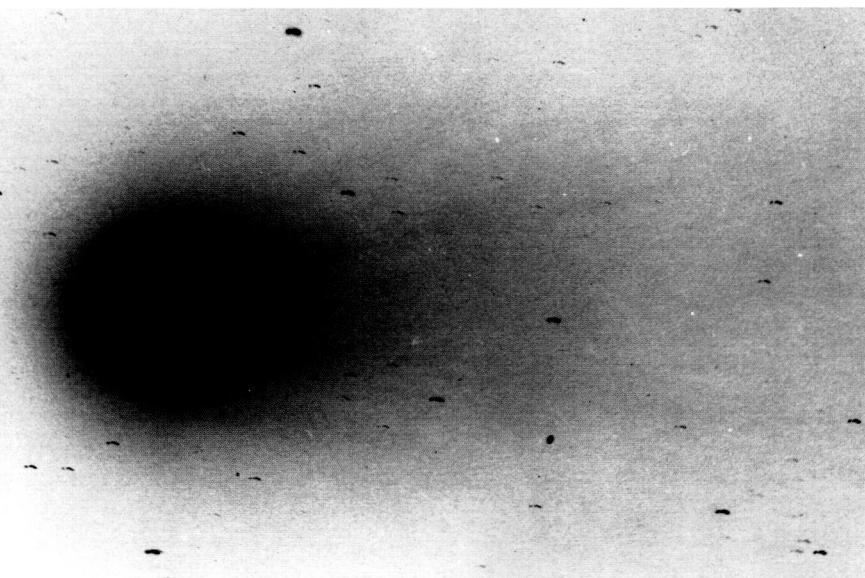


Figure 701-3. 1910 June 3.696; exposure 14 minutes; $r = 1.09$, $\Delta = 0.60$, $\theta = 80^\circ$, $\alpha = 66^\circ$, S = 8.6 E3

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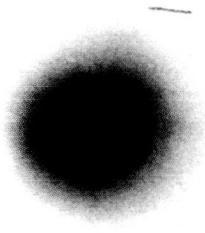


Figure 702-1. 1910
June 3.724; expo-
sure 25 minutes; $r =$
 1.09 , $\Delta = 0.61$, $\theta =$
 80° , $\alpha = 66^\circ$, $S =$
5.6 E3

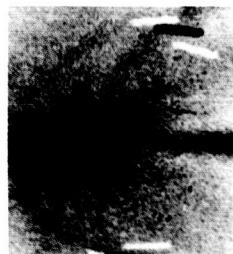


Figure 702-2. 1910
June 3.724; expo-
sure 25 minutes; $r =$
 1.09 , $\Delta = 0.61$, $\theta =$
 80° , $\alpha = 66^\circ$, $S =$
1.2 E3

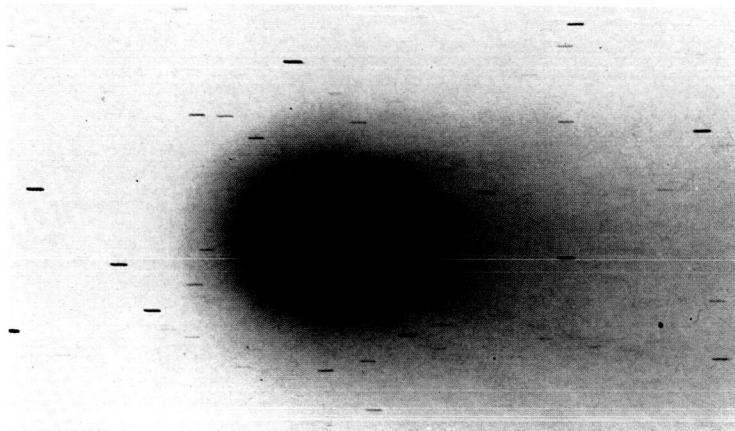


Figure 703. 1910 June 3.726; exposure 25 minutes; $r = 1.09$,
 $\Delta = 0.61$, $\theta = 80^\circ$, $\alpha = 66^\circ$, $S = 1.2$ E4

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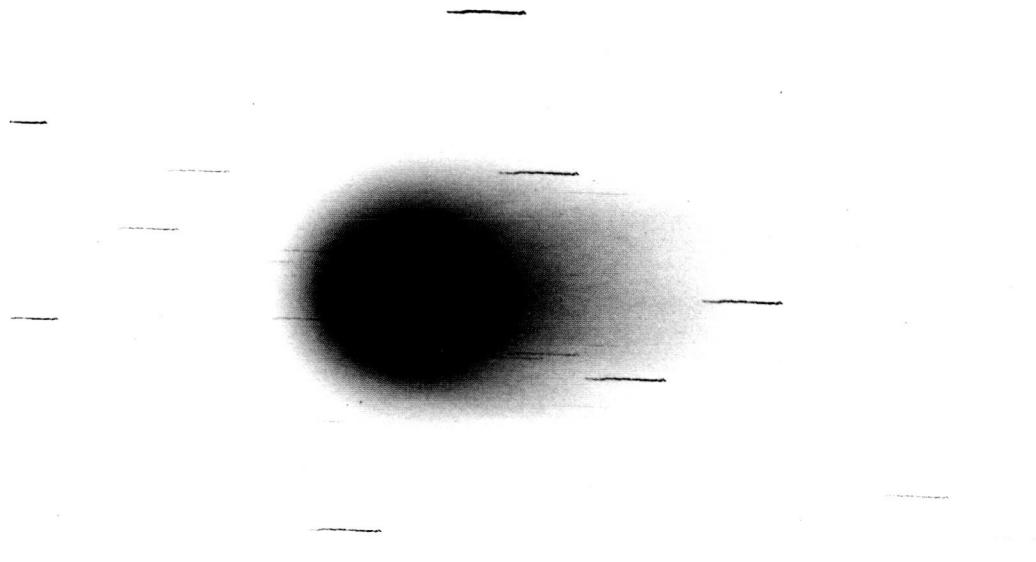


Figure 704-1. 1910 June 3.734; exposure 90 minutes; $r = 1.09$, $\Delta = 0.61$, $\theta = 80^\circ$, $\alpha = 66^\circ$, $S = 8.6$ E3



Figure 704-2. 1910 June 3.734; exposure 90 minutes; $r = 1.09$, $\Delta = 0.61$, $\theta = 80^\circ$, $\alpha = 66^\circ$, $S = 8.6$ E3

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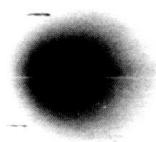


Figure 705-1. 1910 June 3.780; exposure 40 minutes; $r = 1.09$, $\Delta = 0.61$, $\theta = 80^\circ$,
 $\alpha = 66^\circ$, S = 8.7 E3

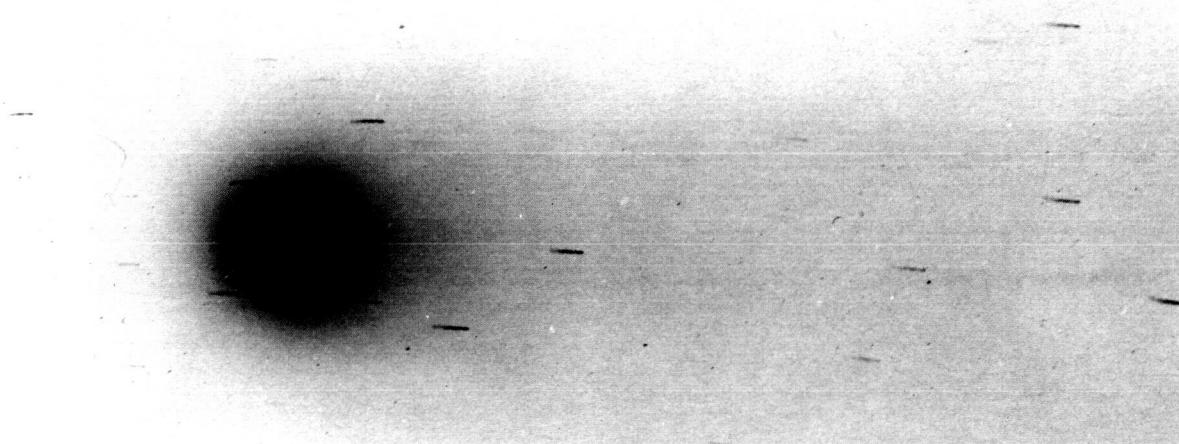


Figure 705-2. 1910 June 3.780; exposure 40 minutes; $r = 1.09$, $\Delta = 0.61$, $\theta = 80^\circ$, $\alpha = 66^\circ$, S = 8.7 E3

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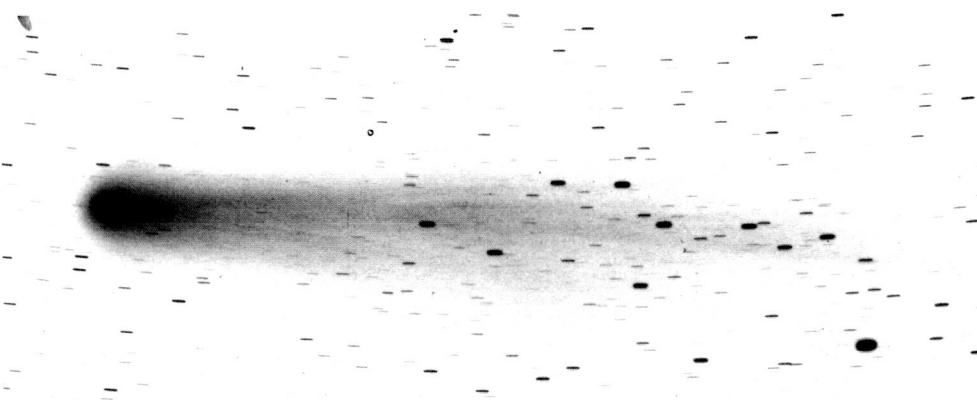


Figure 706-1. 1910 June 4.485; exposure 120 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 64^\circ$, S = 7.5 E4



Figure 706-2. 1910 June 4.485; exposure 120 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 64^\circ$, S = 7.5 E4

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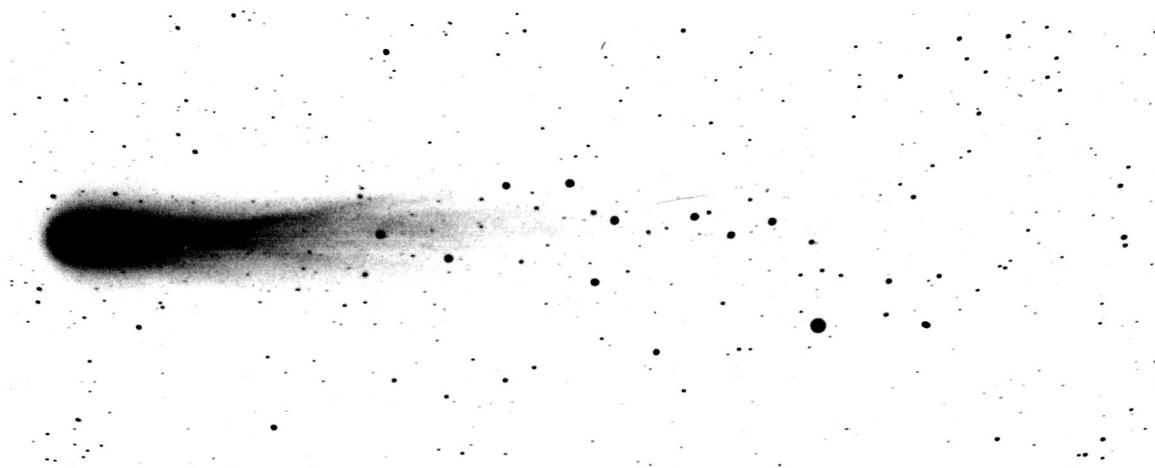


Figure 707-1. 1910 June 4.540; exposure 30 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 7.5 \text{ E}4$

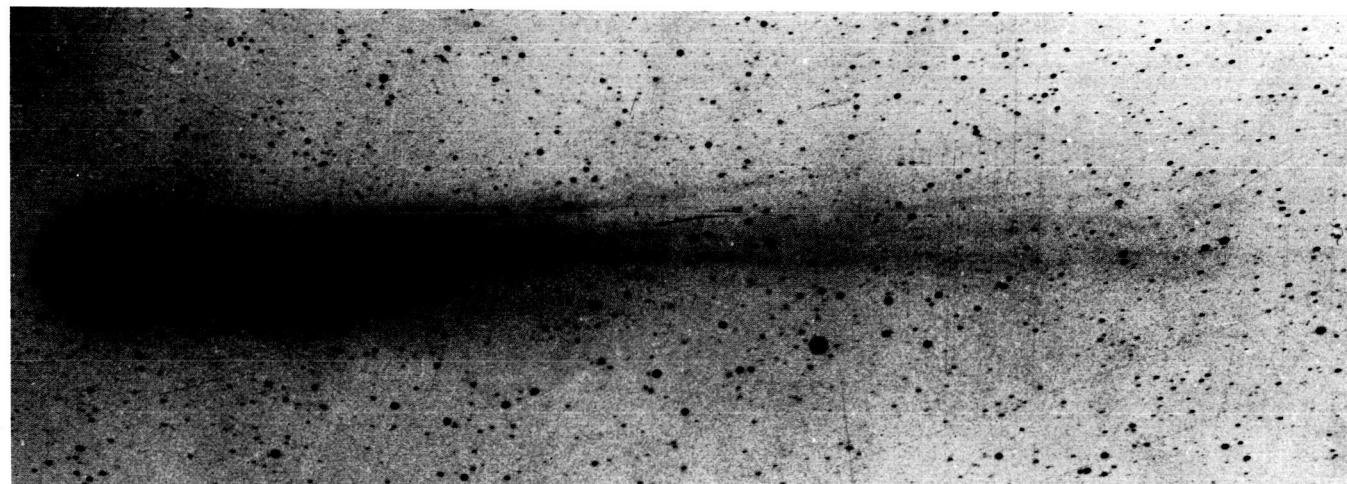


Figure 707-2. 1910 June 4.540; exposure 30 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 7.5 \text{ E}4$

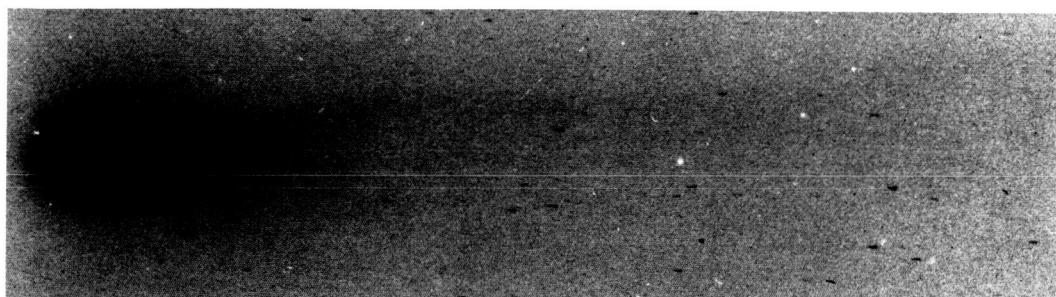


Figure 708. 1910 June 4.577; exposure 24 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 2.3 \text{ E}4$

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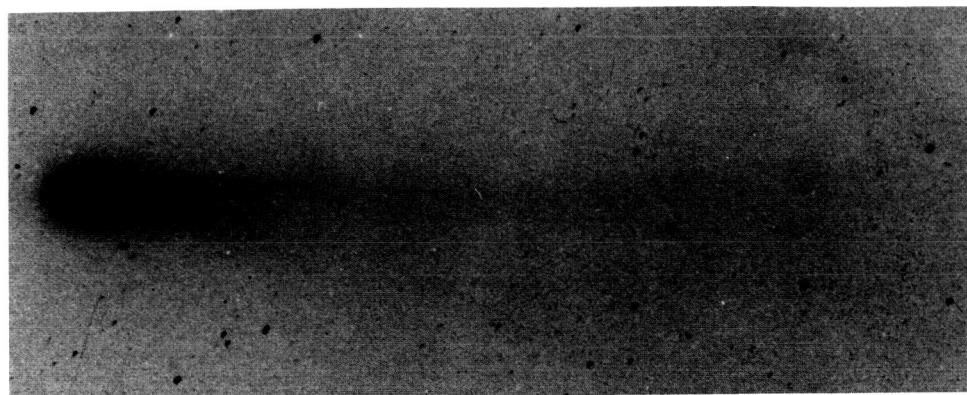


Figure 709. 1910 June 4.599; exposure 64 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 3.8$ E4

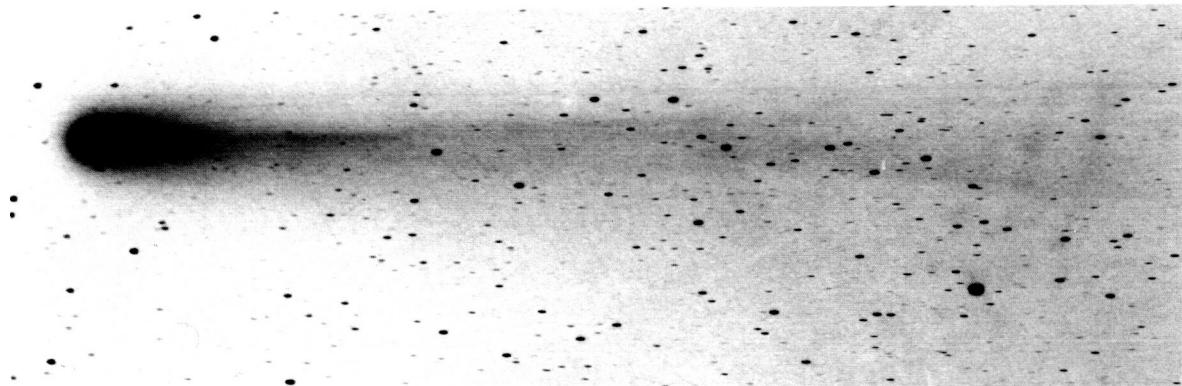


Figure 710. 1910 June 4.725; exposure 55 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 6.2$ E4

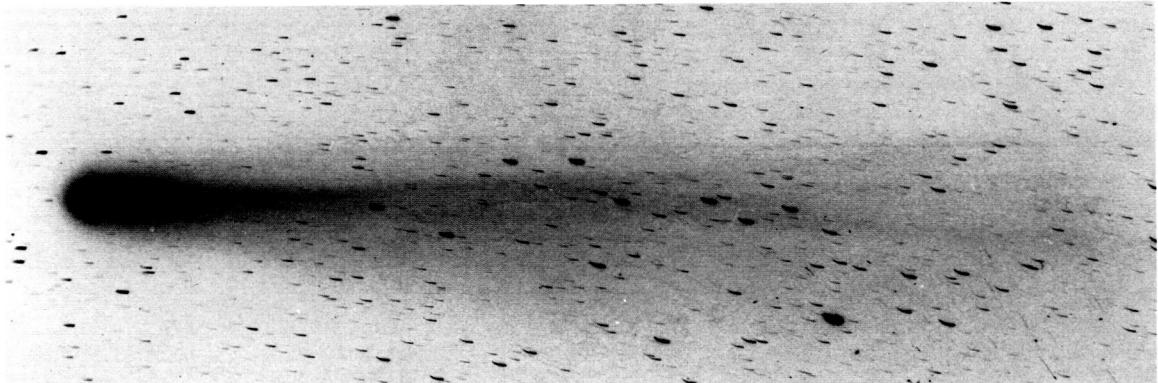


Figure 711. 1910 June 4.748; exposure 121 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 7.4$ E4

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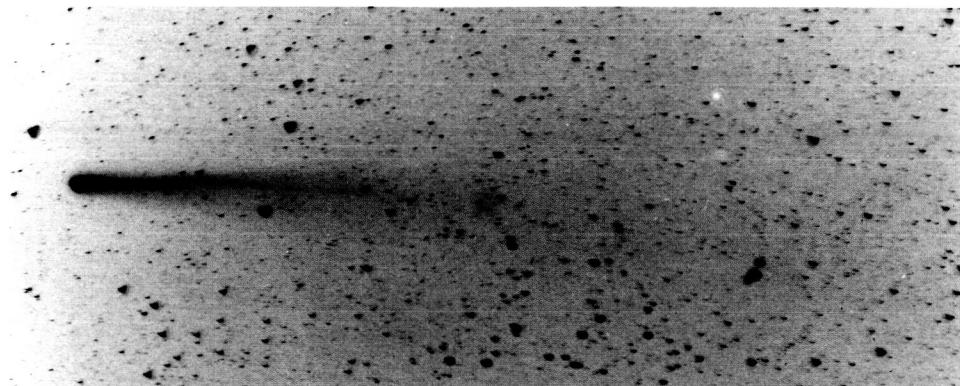


Figure 712. 1910 June 4.751; exposure 130 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 3.1 \text{ E}5$

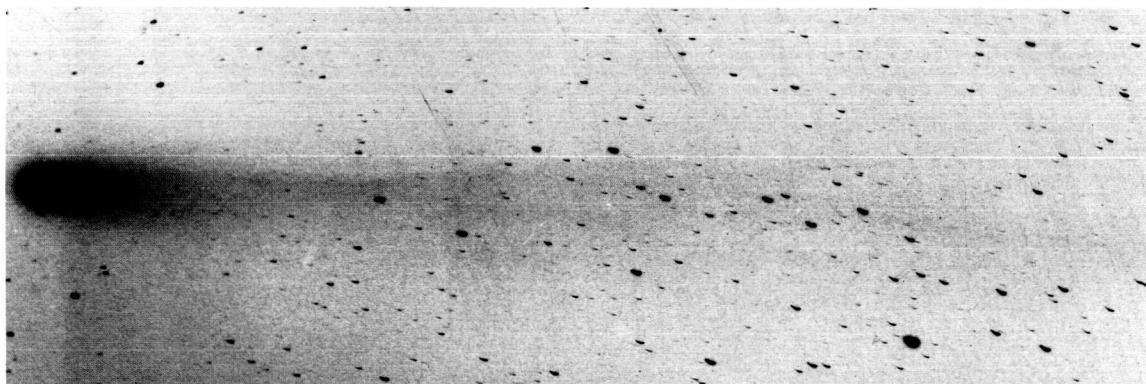


Figure 713. 1910 June 4.768; exposure 65 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 6.2 \text{ E}4$

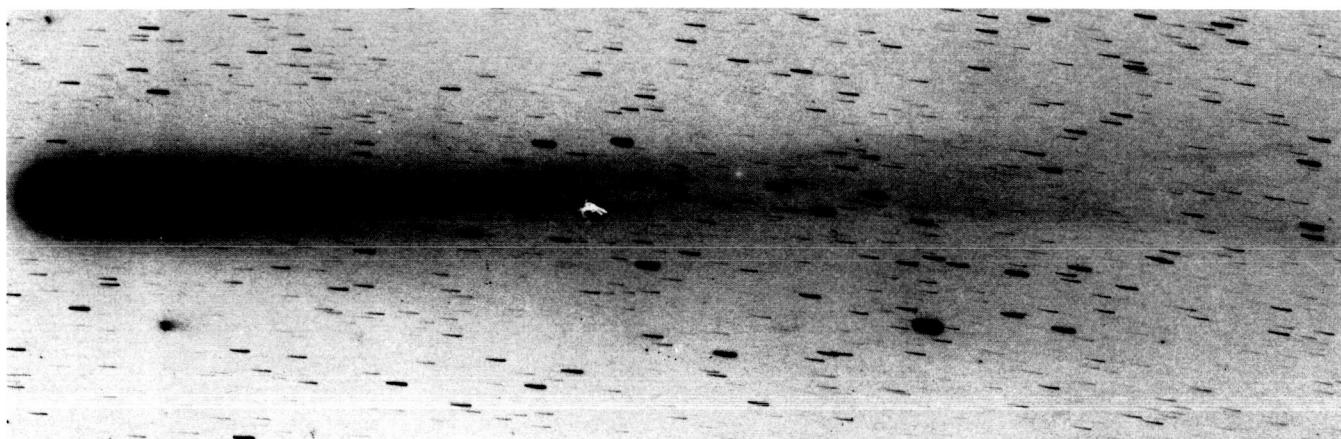


Figure 714. 1910 June 4.815; exposure 163 minutes; $r = 1.11$, $\Delta = 0.65$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 6.0 \text{ E}4$

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Figure 715-1. 1910 June 4.257;
exposure 5 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 65^\circ$, $S = 1.4$
E4

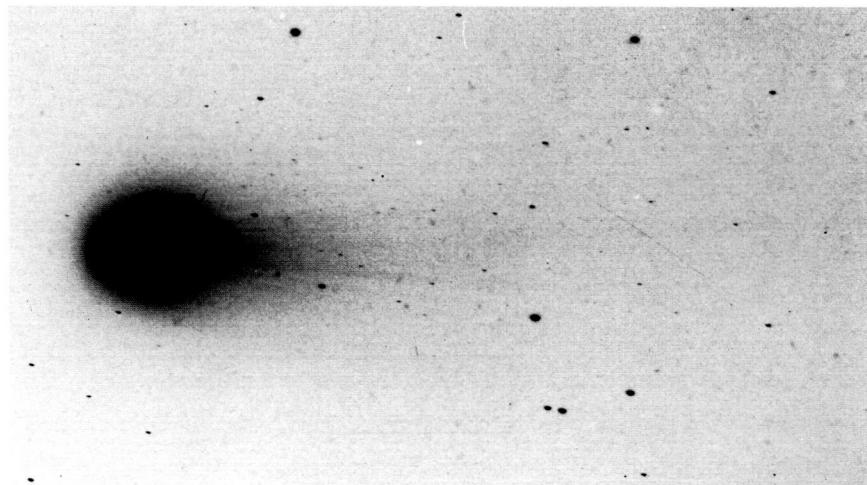


Figure 715-2. 1910 June 4.257; exposure 5 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 65^\circ$, $S = 1.4$ E4

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Figure 716-1. 1910 June 4.274; exposure 30 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 65^\circ$, $S = 1.4 \text{ E}4$

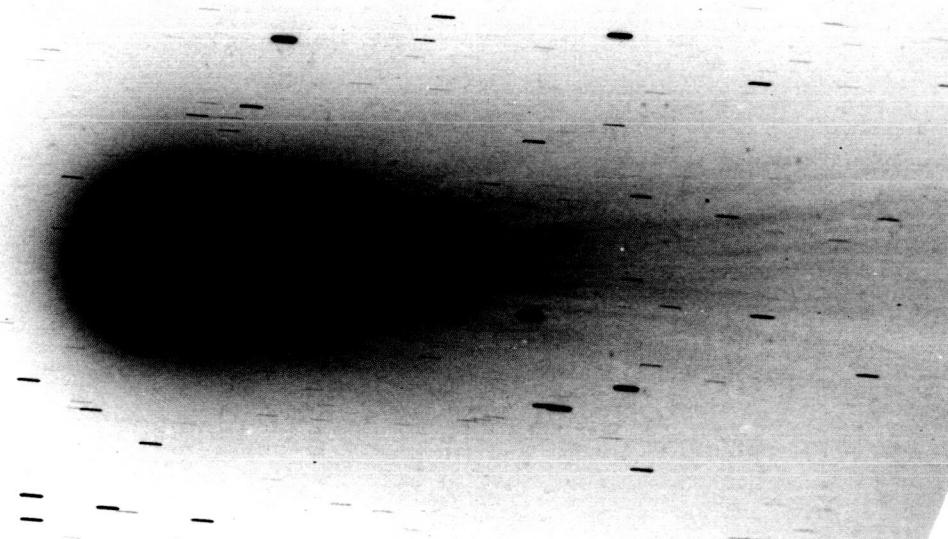


Figure 716-2. 1910 June 4.274; exposure 30 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 65^\circ$, $S = 1.4 \text{ E}4$

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Figure 717-1. 1910 June 4.328; exposure 10 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 65^\circ$, $S = 1.4 E4$

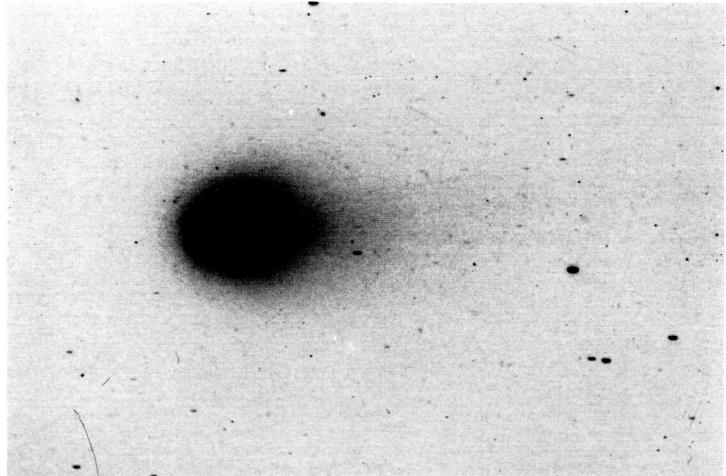


Figure 717-2. 1910 June 4.328; exposure 10 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 65^\circ$, $S = 1.4 E4$



Figure 718a. 1910 June 4.454; exposure 5 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 65^\circ$, $S = 1.4 E4$



Figure 718b. 1910 June 4.447; exposure 11 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 65^\circ$, $S = 1.4 E4$

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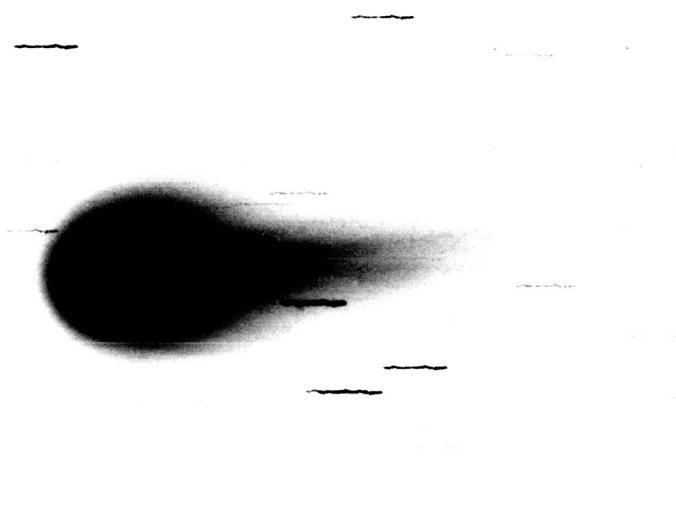


Figure 719-1. 1910 June 4.507; exposure 120 minutes; $r = 1.10$,
 $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 64^\circ$, S = 1.4 E4

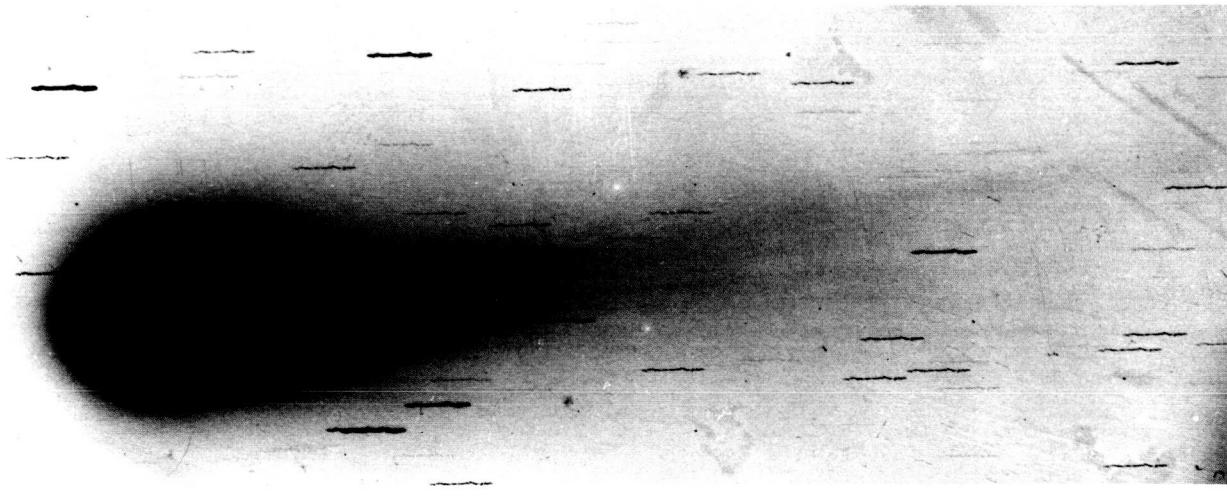


Figure 719-2. 1910 June 4.507; exposure 120 minutes; $r = 1.10$, $\Delta = 0.63$, $\theta = 80^\circ$, $\alpha = 64^\circ$, S = 1.4 E4

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Figure 720. 1910 June 4.693; exposure 18 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 1.3$ E4

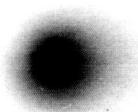


Figure 721-1. 1910 June 4.696; exposure 7 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 9.1$ E3

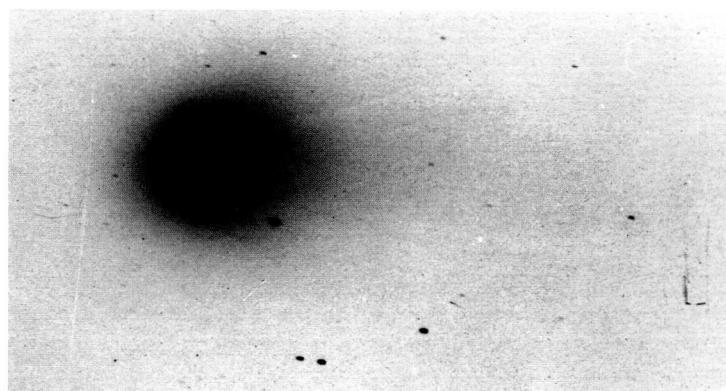


Figure 721-2. 1910 June 4.696; exposure 7 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 80^\circ$, $\alpha = 64^\circ$, $S = 9.1$ E3

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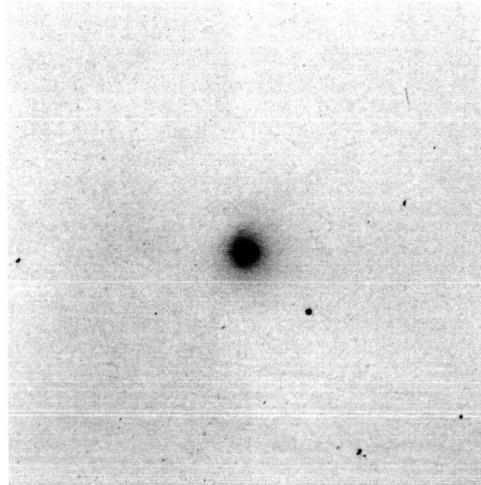


Figure 722. 1910 June 4.700; exposure 1 minute; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 9.1 \text{ E}3$

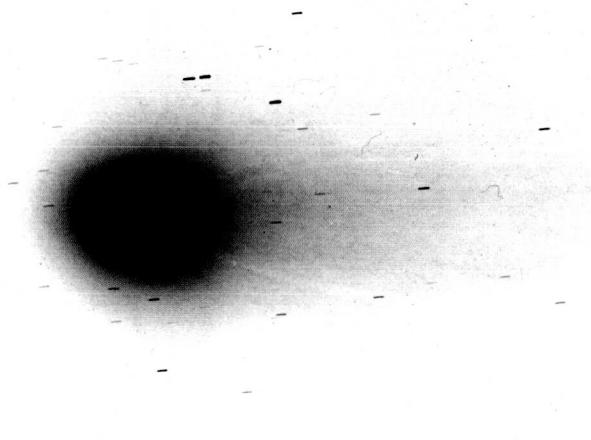


Figure 723. 1910 June 4.715; exposure 18 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, $S = 1.3 \text{ E}4$

ATLAS OF COMET HALLEY 1910 II

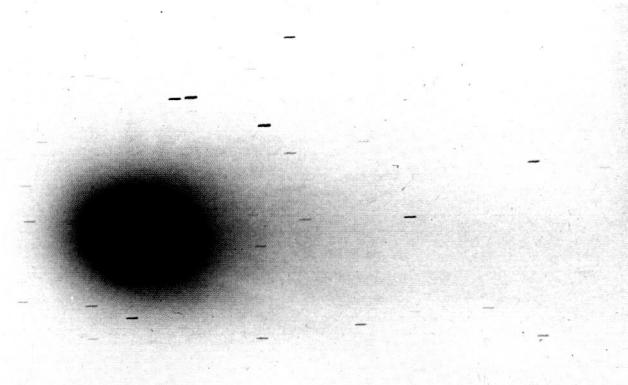


Figure 724-1. 1910 June 4.737; exposure 20 minutes;
 $r = 1.10, \Delta = 0.64, \theta = 80^\circ, \alpha = 64^\circ, S = 5.6 \text{ E}3$

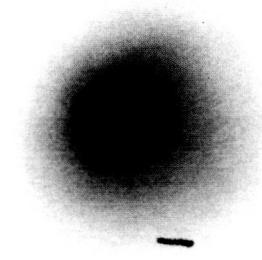


Figure 724-2. 1910
June 4.737; exposure 20
minutes; $r = 1.10, \Delta =$
 $0.64, \theta = 80^\circ, \alpha = 64^\circ,$
 $S = 5.6 \text{ E}3$

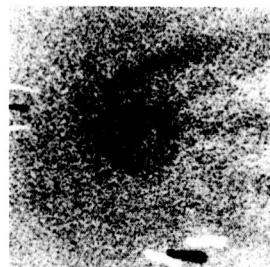


Figure 724-3. 1910
June 4.737; exposure 20
minutes; $r = 1.10, \Delta =$
 $0.64, \theta = 80^\circ, \alpha = 64^\circ,$
 $S = 1.3 \text{ E}4$

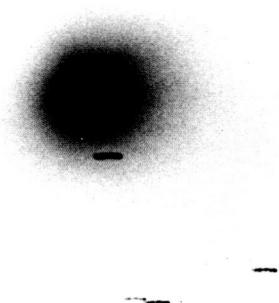


Figure 725. 1910 June 4.738; exposure 30 minutes;
 $r = 1.10, \Delta = 0.64, \theta = 80^\circ, \alpha = 64^\circ, S = 8.7 \text{ E}3$

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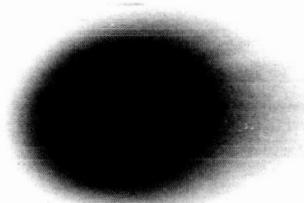


Figure 726-1. 1910 June 4.741; exposure 100 minutes;
 $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, S = 9.2 E3

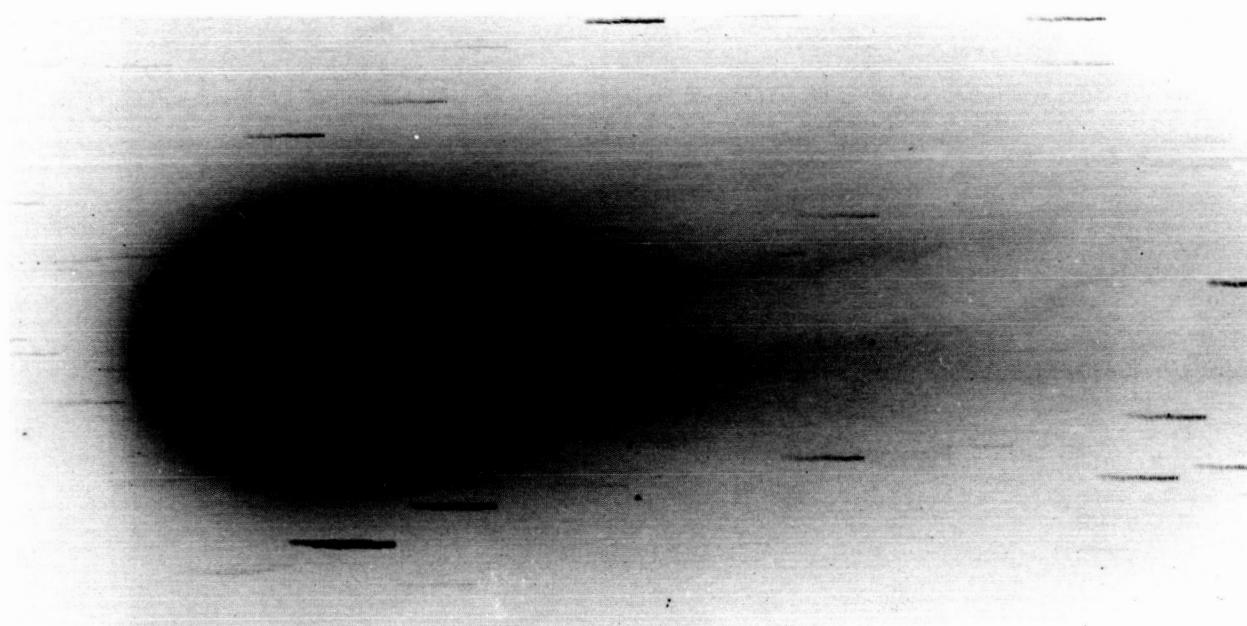


Figure 726-2. 1910 June 4.741; exposure 100 minutes; $r = 1.10$, $\Delta = 0.64$, $\theta = 80^\circ$, $\alpha = 64^\circ$, S = 9.2 E3

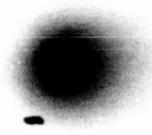


Figure 727. 1910 June 4.783; exposure 20 minutes;
 $r = 1.10$, $\Delta = 0.65$, $\theta = 80^\circ$, $\alpha = 64^\circ$, S = 9.2 E3

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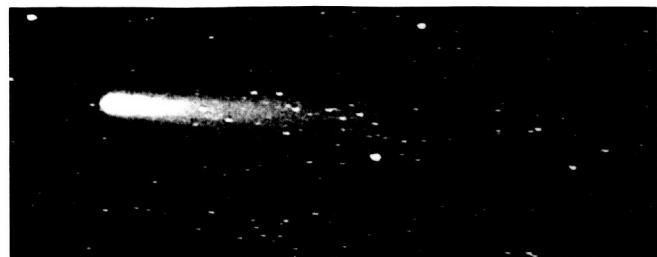


Figure 728. 1910 June 5.072; exposure 130 minutes; $r = 1.11$, $\Delta = 0.66$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 2.0 \text{ E}5$

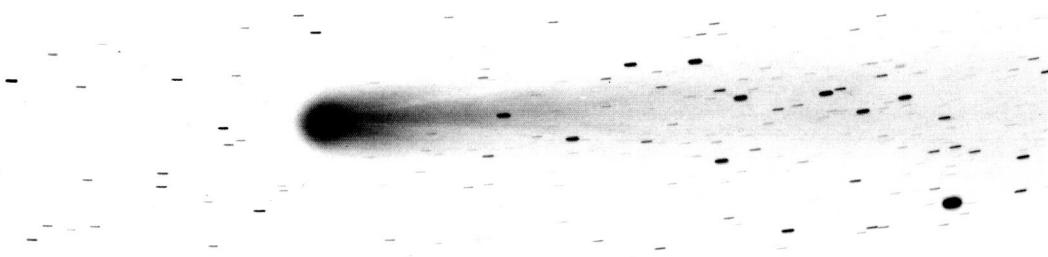


Figure 729-1. 1910 June 5.489; exposure 120 minutes; $r = 1.12$, $\Delta = 0.67$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 7.9 \text{ E}4$

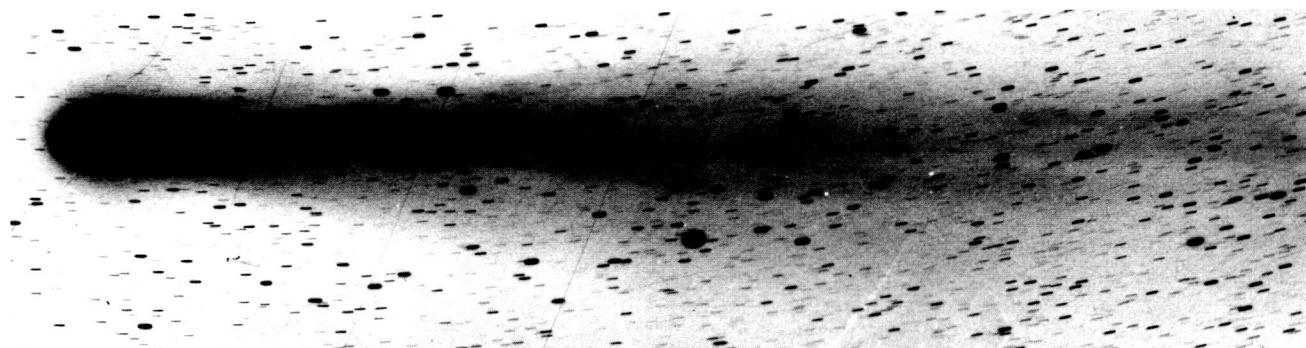


Figure 729-2. 1910 June 5.489; exposure 120 minutes; $r = 1.12$, $\Delta = 0.67$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 7.9 \text{ E}4$

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Figure 730-1. 1910 June 5.544; exposure 30 minutes; $r = 1.12$,
 $\Delta = 0.67$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 7.9$ E4

Figure 730-2. 1910 June 5.544; exposure 30 minutes; $r = 1.12$, $\Delta = 0.67$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 7.9$ E4

Figure 730-3. 1910 June 5.544; exposure 30 minutes; $r = 1.12$, $\Delta = 0.67$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 7.9$ E4

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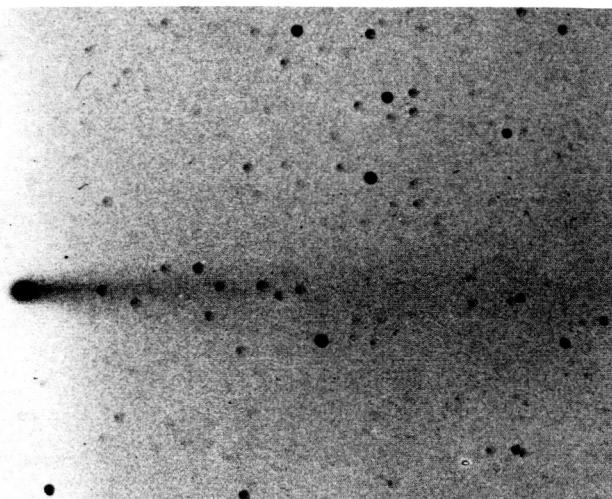


Figure 731. 1910 June 5.638; exposure 68 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 1.6 \text{ E}5$

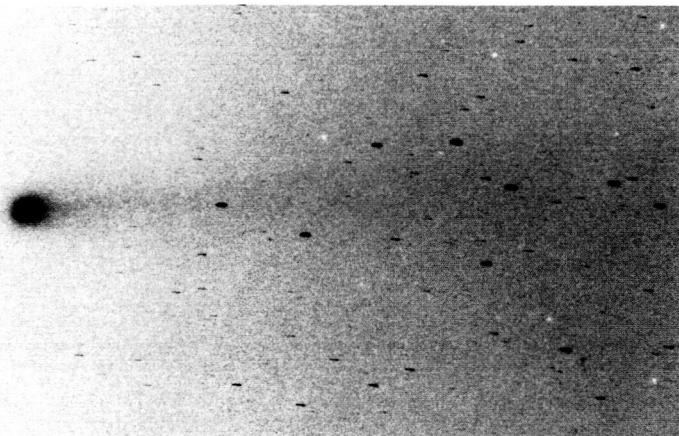


Figure 732. 1910 June 5.638; exposure 68 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 6.5 \text{ E}4$

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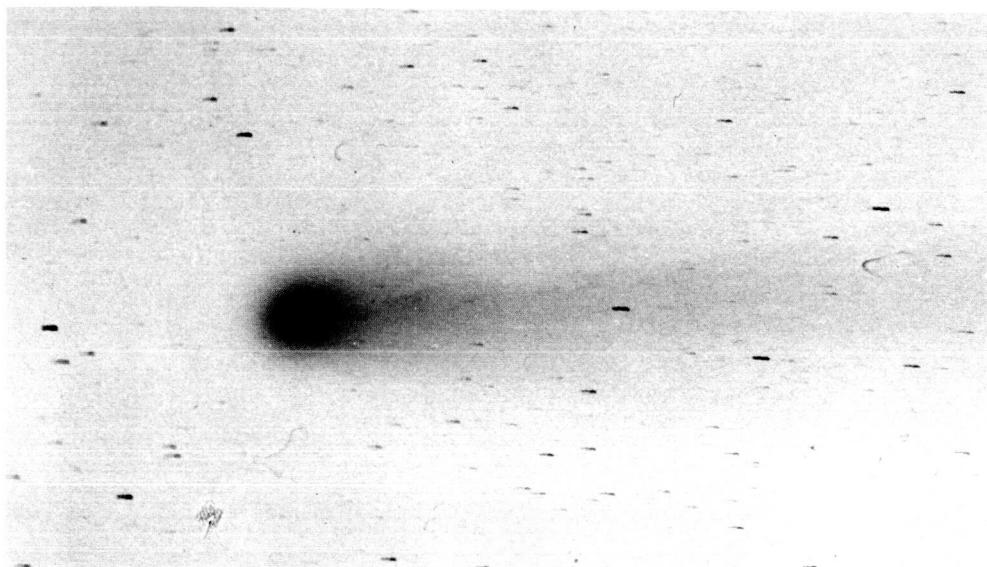


Figure 733-1. 1910 June 5.638; exposure 68 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 63^\circ$, S = 4.0 E4

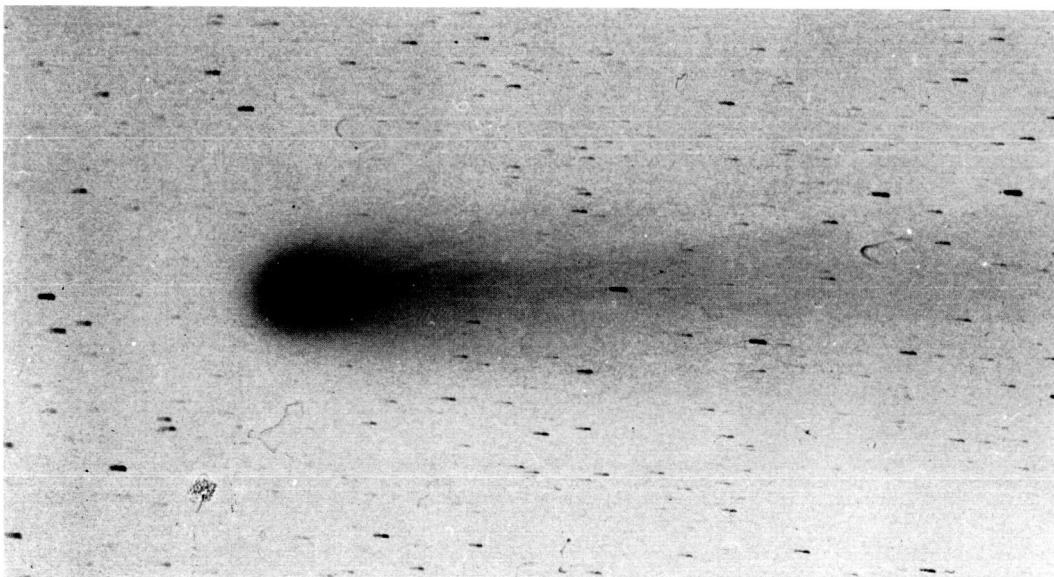


Figure 733-2. 1910 June 5.638; exposure 68 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 90^\circ$, $\alpha = 63^\circ$, S = 4.0 E4

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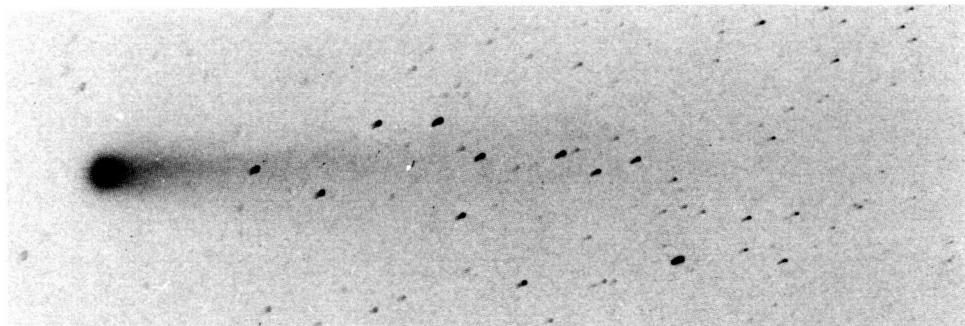


Figure 734. 1910 June 5.638; exposure 68 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 8.6$ E4

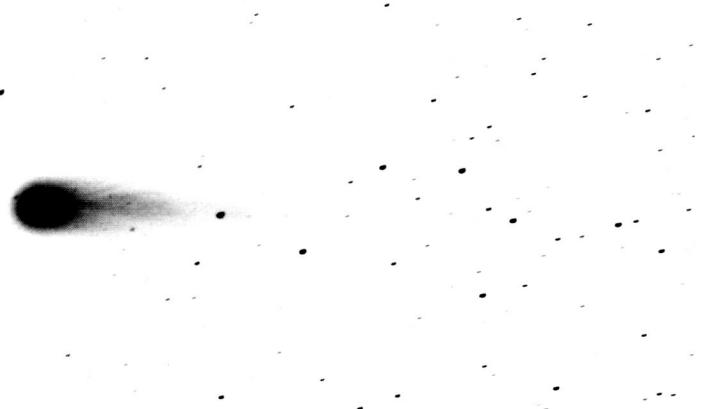


Figure 735-1. 1910 June 5.719; exposure 58 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 6.6$ E4

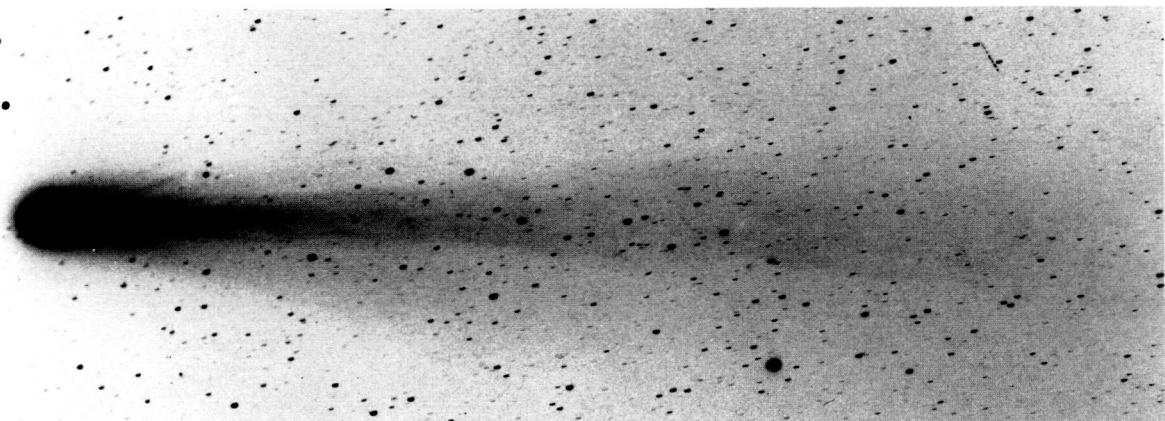


Figure 735-2. 1910 June 5.719; exposure 58 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 6.6$ E4

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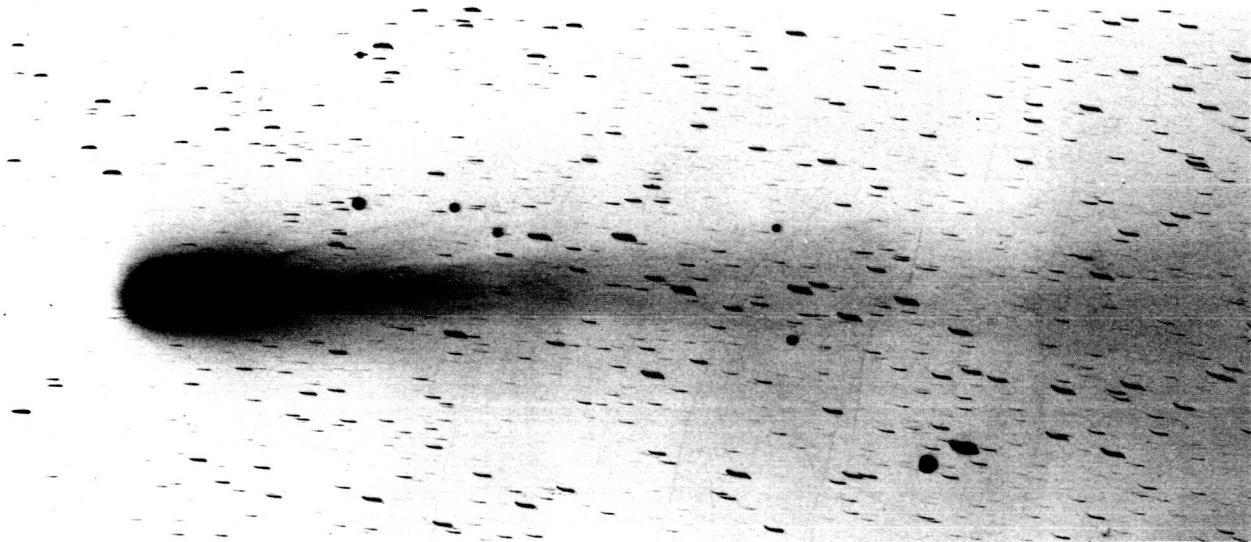


Figure 736. 1910 June 5.724; exposure 122 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 5.8 \text{ E}4$

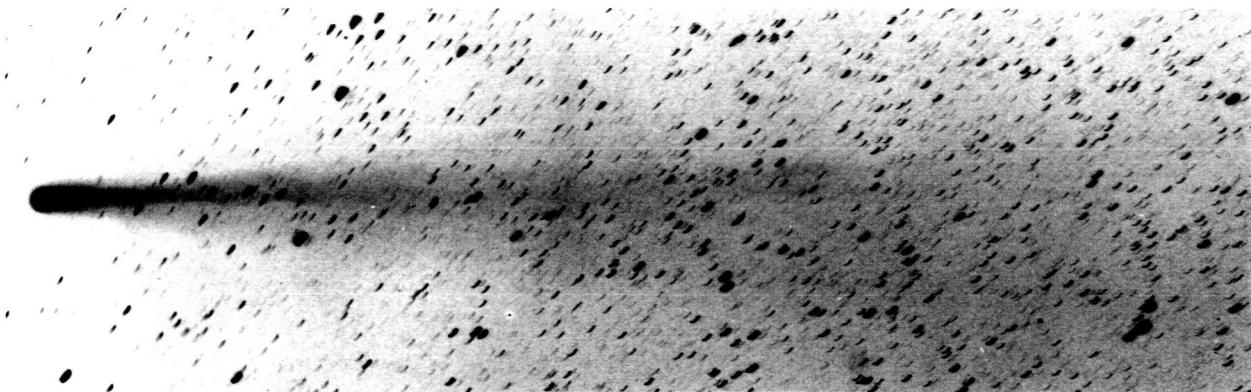


Figure 737. 1910 June 5.726; exposure 125 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 1.9 \text{ E}5$

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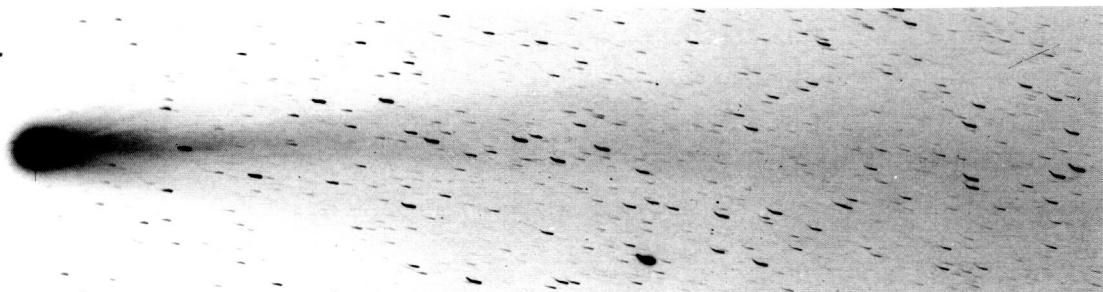


Figure 738. 1910 June 5.746; exposure 130 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 7.8 \text{ E}4$

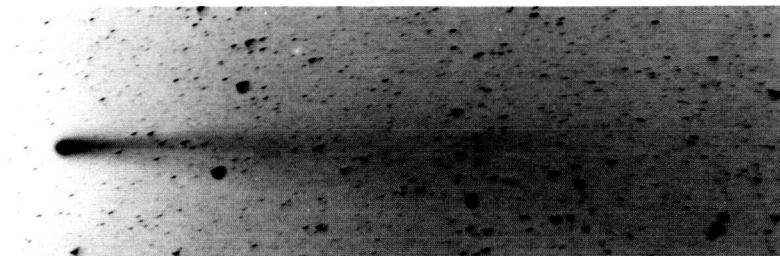


Figure 739. 1910 June 5.748; exposure 135 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 3.3 \text{ E}5$

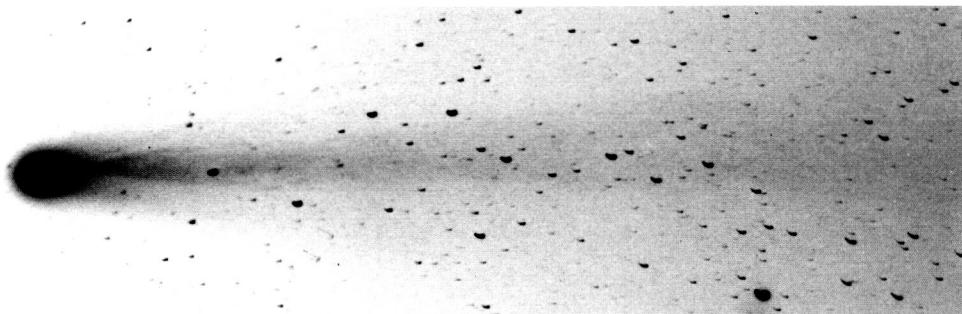


Figure 740. 1910 June 5.764; exposure 79 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 6.6 \text{ E}4$

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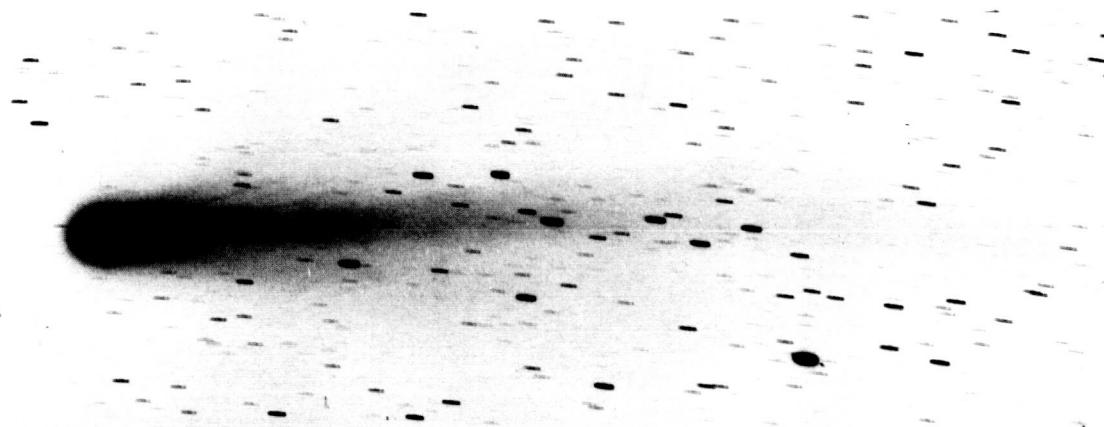


Figure 741. 1910 June 5.815; exposure 132 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$,
 $S = 6.4 \text{ E}4$



Figure 742-1. 1910 June 5.266; exposure 5 minutes;
 $r = 1.11$, $\Delta = 0.66$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 1.5 \text{ E}4$

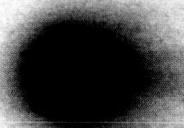


Figure 742-2. 1910 June 5.266; exposure 5 minutes; $r = 1.11$,
 $\Delta = 0.66$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 1.5 \text{ E}4$

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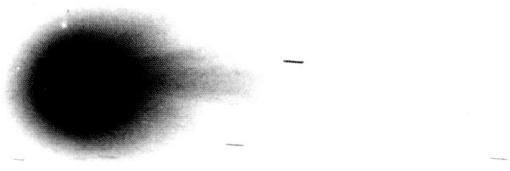


Figure 743-1. 1910 June 5.280; exposure 30 minutes; $r = 1.11$, $\Delta = 0.66$,
 $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 1.5 E4$



Figure 743-2. 1910 June 5.280; exposure 30 minutes; $r = 1.11$, $\Delta = 0.66$, $\theta = 80^\circ$, $\alpha = 63^\circ$, $S = 1.5 E4$

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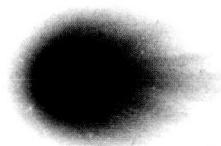


Figure 744-1. 1910 June 5.306; exposure 20 minutes; $r = 1.11$, $\Delta = 0.67$,
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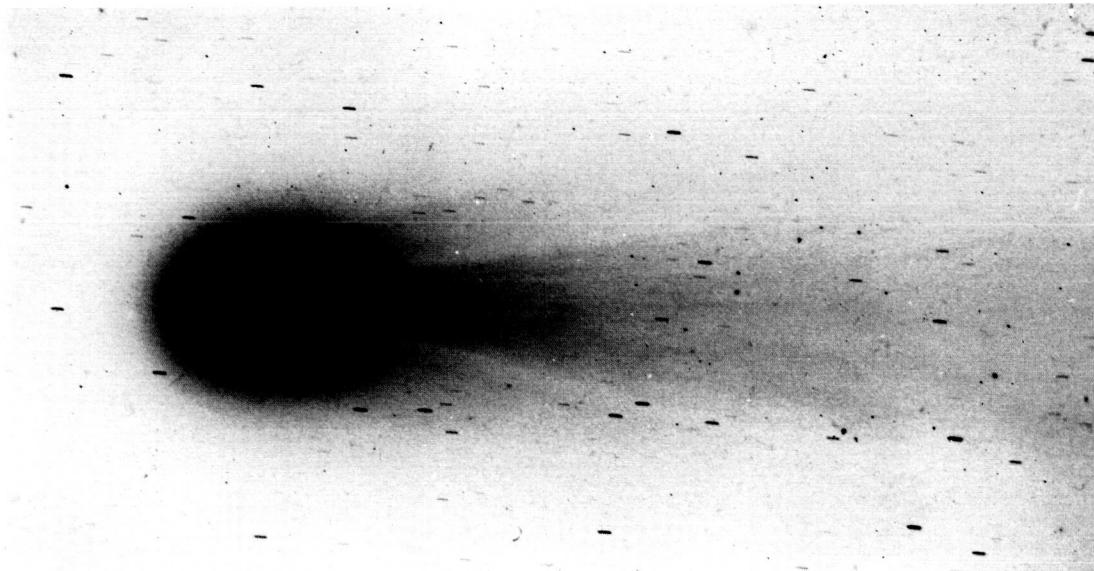


Figure 744-2. 1910 June 5.306; exposure 20 minutes; $r = 1.11$, $\Delta = 0.67$, $\theta = 80^\circ$, $\alpha = 63^\circ$, S = 1.5 E4

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Figure 745-1. 1910 June 5.326; exposure 10 minutes; $r = 1.11$,
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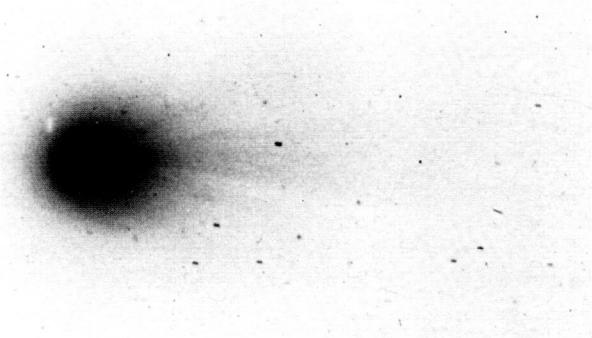


Figure 745-2. 1910 June 5.326; exposure 10 minutes; $r = 1.11$, $\Delta = 0.67$, $\theta = 80^\circ$, $\alpha = 63^\circ$, S = 1.5 E4

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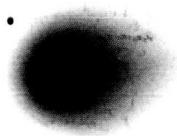


Figure 746-1. 1910 June 5.506; exposure
120 minutes; $r = 1.12$, $\Delta = 0.67$, $\theta = 80^\circ$,
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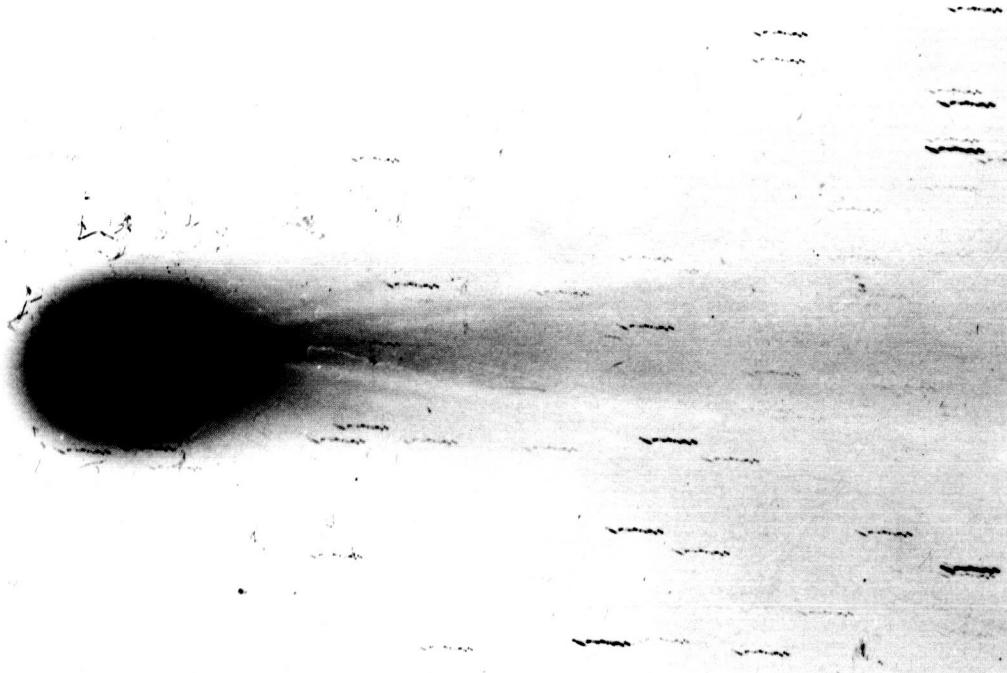


Figure 746-2. 1910 June 5.506; exposure 120 minutes; $r = 1.12$, $\Delta = 0.67$, $\theta = 80^\circ$, $\alpha = 63^\circ$,
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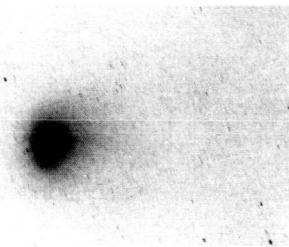


Figure 747. 1910 June 5.690; expos-
ure 2 minutes; $r = 1.12$, $\Delta = 0.68$,
 $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 9.7 \text{ E}3$

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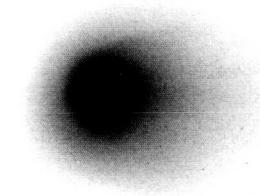


Figure 748-1. 1910 June 5.696; exposure 13 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 9.7 E3$

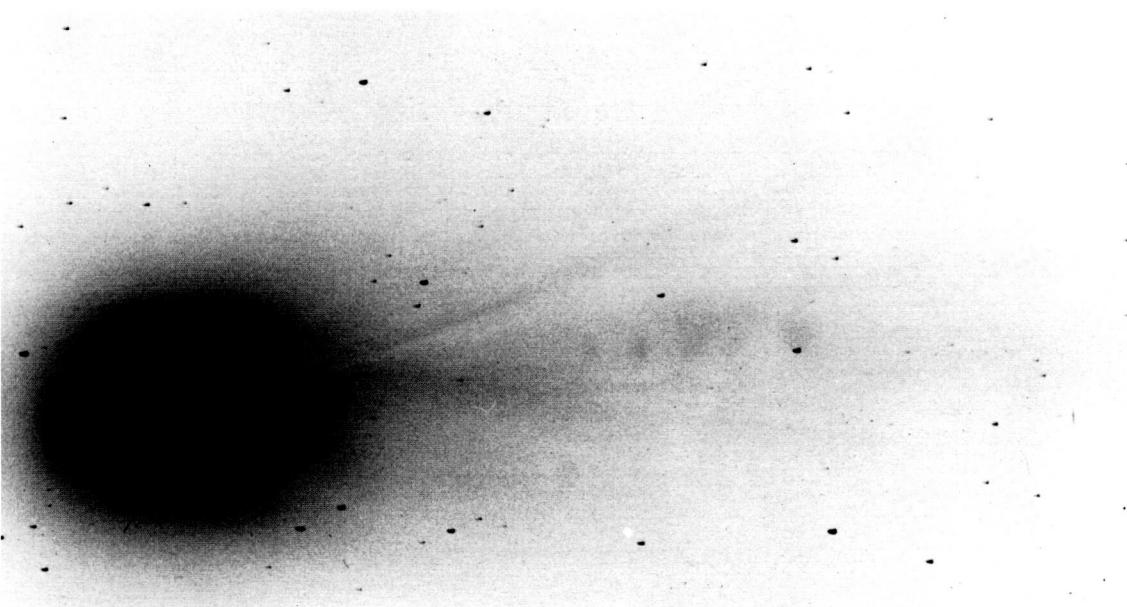


Figure 748-2. 1910 June 5.696; exposure 13 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 9.7 E3$

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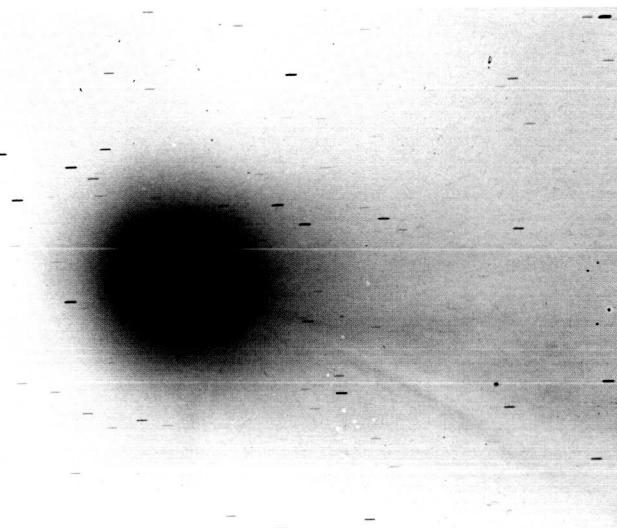


Figure 749-1. 1910 June 5.717; exposure 9 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 5.6$ E4

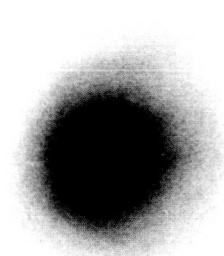


Figure 749-2. 1910 June 5.717; exposure 9 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 1.3$ E3



Figure 749-3. 1910 June 5.717; exposure 9 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 1.3$ E3

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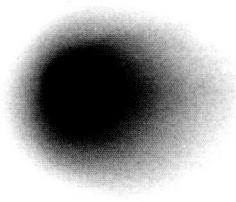


Figure 750-1. 1910 June 5.736; exposure 100 minutes;
 $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 9.7$ E3

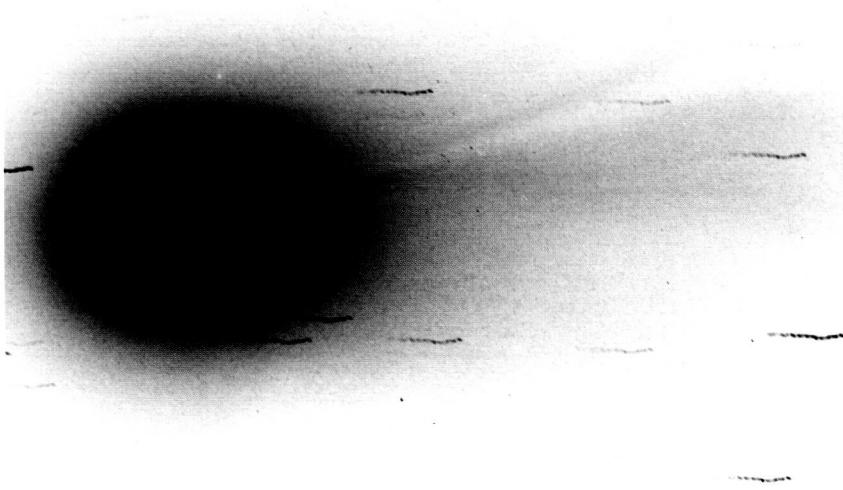


Figure 750-2. 1910 June 5.736; exposure 100 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$,
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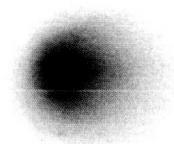


Figure 751-1. 1910 June 5.782; exposure 29 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, S = 9.7 E3

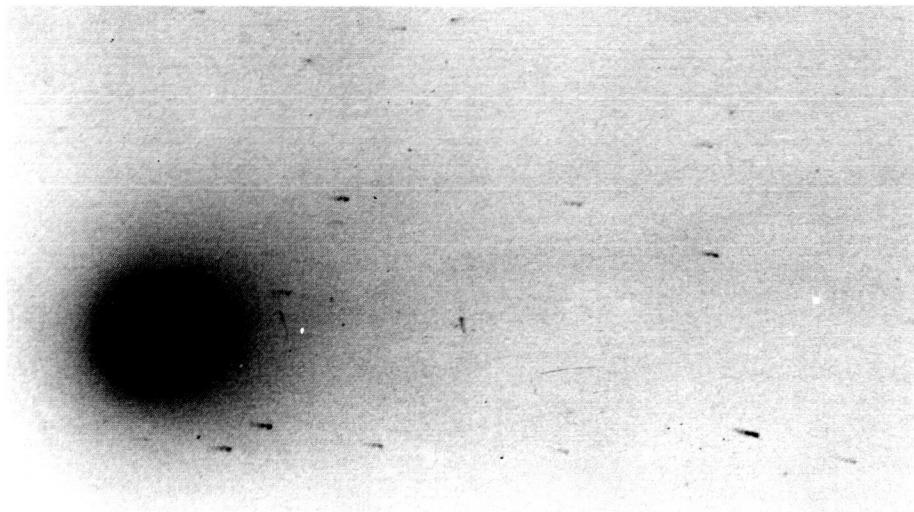


Figure 751-2. 1910 June 5.782; exposure 29 minutes; $r = 1.12$, $\Delta = 0.68$, $\theta = 80^\circ$, $\alpha = 62^\circ$, S = 9.7 E3

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Figure 752. 1910 June 6.068; exposure 130 minutes;
 $r = 1.12$, $\Delta = 0.69$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 3.6 \text{ E}5$



Figure 753. 1910 June 6.068; exposure
130 minutes; $r = 1.12$, $\Delta = 0.69$, $\theta =$
 80° , $\alpha = 62^\circ$, $S = 2.1 \text{ E}5$

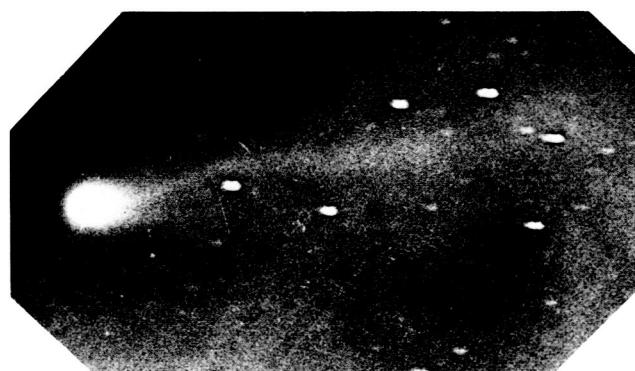


Figure 754. 1910 June 6.068; exposure 130 minutes;
 $r = 1.12$, $\Delta = 0.69$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 5.9 \text{ E}4$

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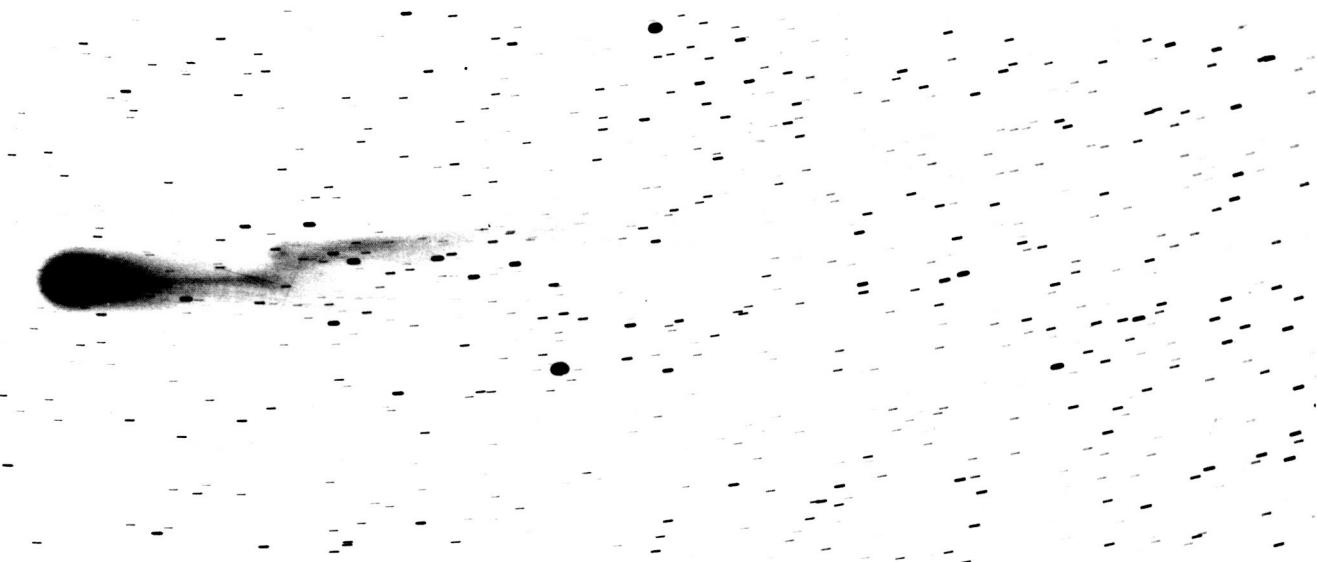


Figure 755-1. 1910 June 6.499; exposure 120 minutes; $r = 1.13$, $\Delta = 0.71$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 8.3 \text{ E}4$

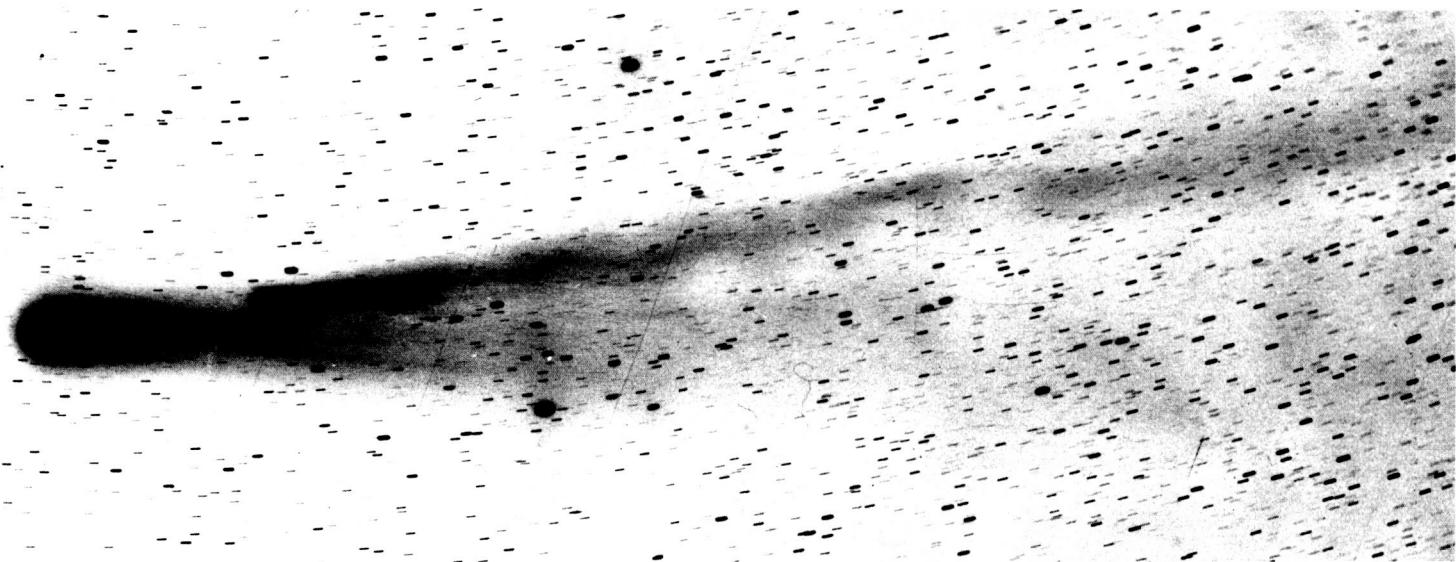


Figure 755-2. 1910 June 6.499; exposure 120 minutes; $r = 1.13$, $\Delta = 0.71$, $\theta = 800$, $\alpha = 61^\circ$, $S = 8.3 \text{ E}4$

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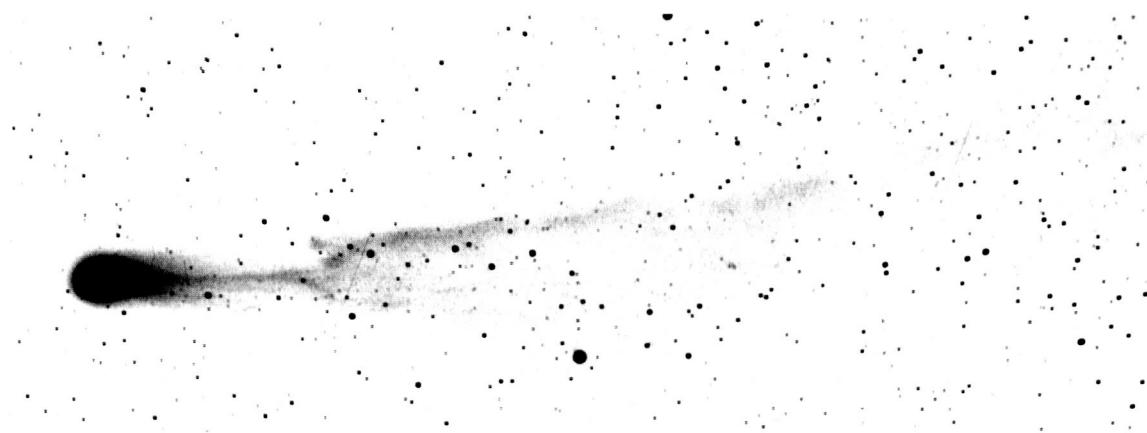


Figure 756-1. 1910 June 6.554; exposure 31 minutes; $r = 1.13$, $\Delta = 0.71$, $\theta = 80^\circ$, $\alpha = 61^\circ$,
 $S = 8.4$ E4

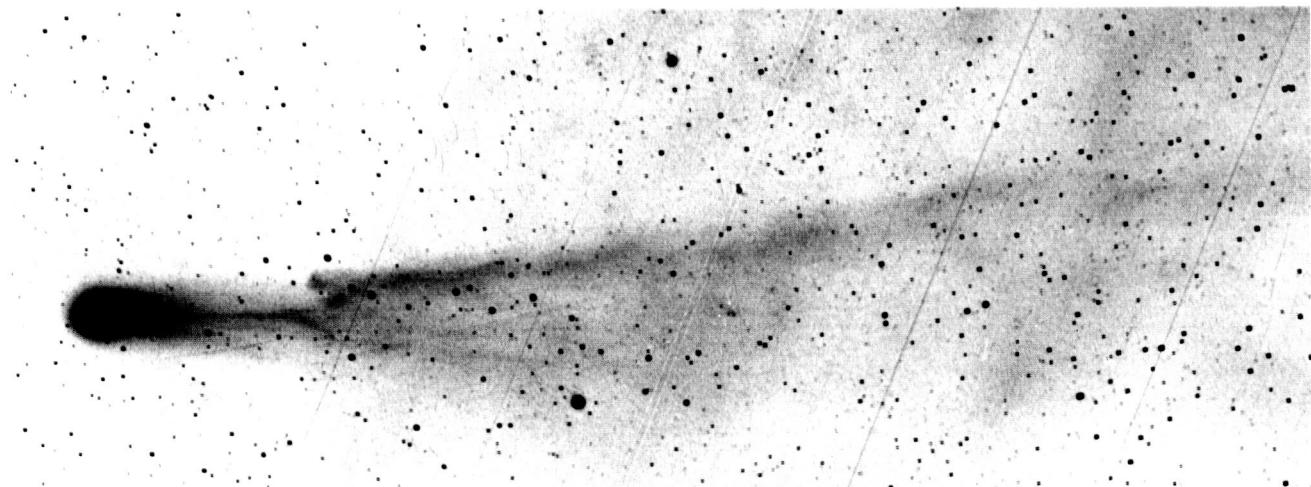


Figure 756-2. 1910 June 6.554; exposure 31 minutes; $r = 1.13$, $\Delta = 0.71$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 8.4$ E4

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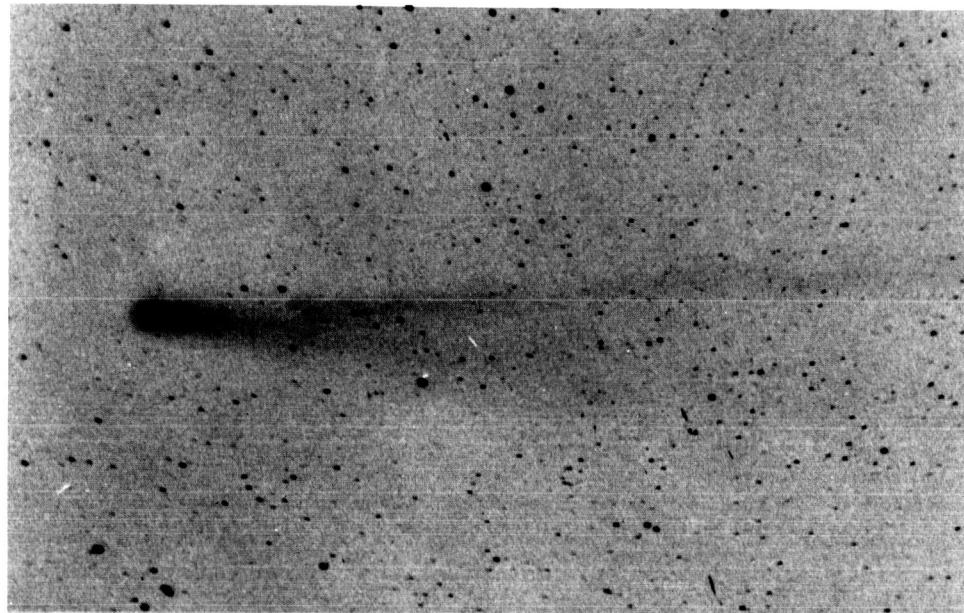


Figure 757. 1910 June 6.631; exposure 75 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 1.5 \text{ E}5$



Figure 758. 1910 June 6.658; exposure 120 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 6.9 \text{ E}4$

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Figure 759-1. 1910 June 6.658;
exposure 120 minutes; $r = 1.13$,
 $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$,
 $S = 4.2$ E4



Figure 759-2. 1910 June 6.658; exposure 120 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 4.2$ E4

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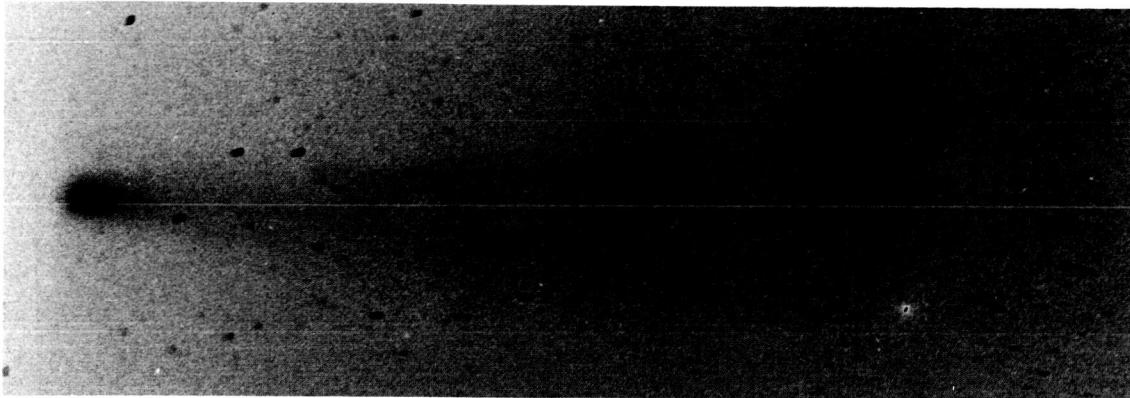


Figure 760. 1910 June 6.658; exposure 120 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 9.1 \text{ E}4$

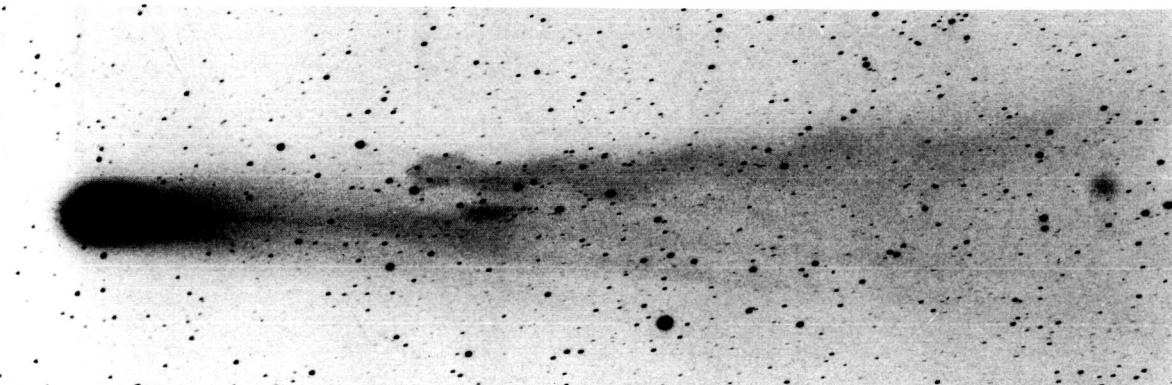


Figure 761. 1910 June 6.719; exposure 50 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 6.9 \text{ E}4$

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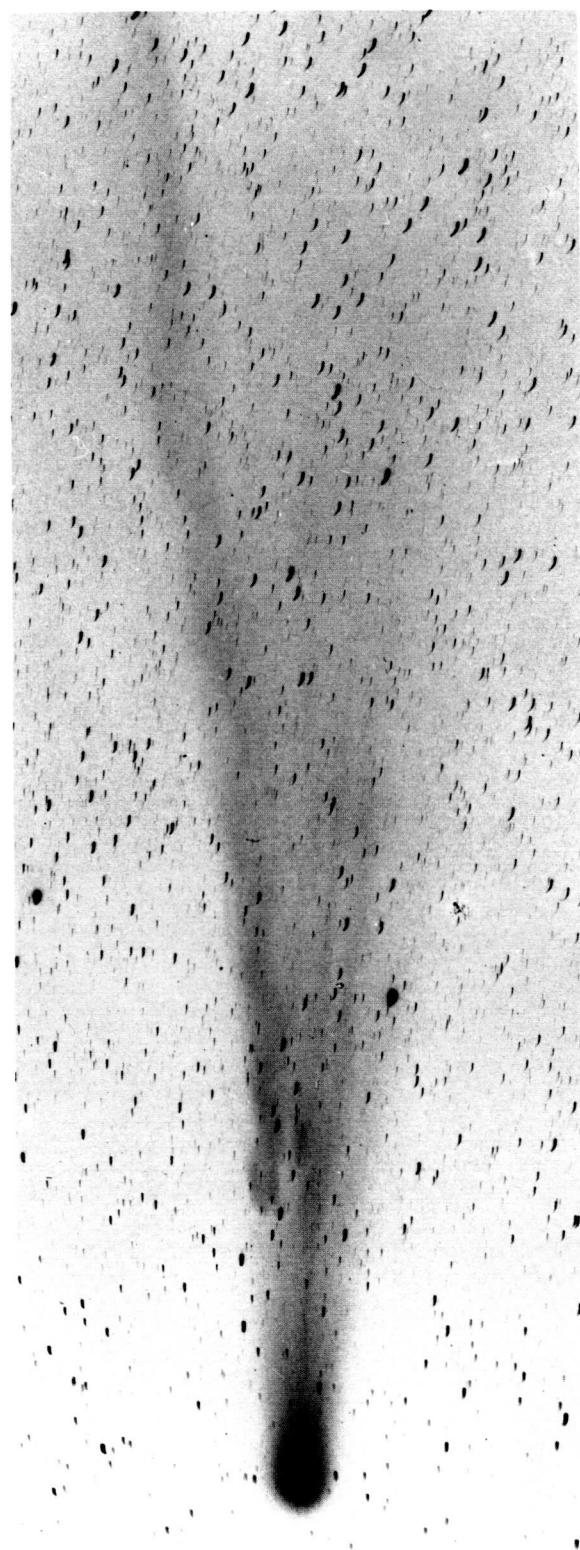


Figure 762. 1910 June 6.745; exposure 125 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 8.2$ E4

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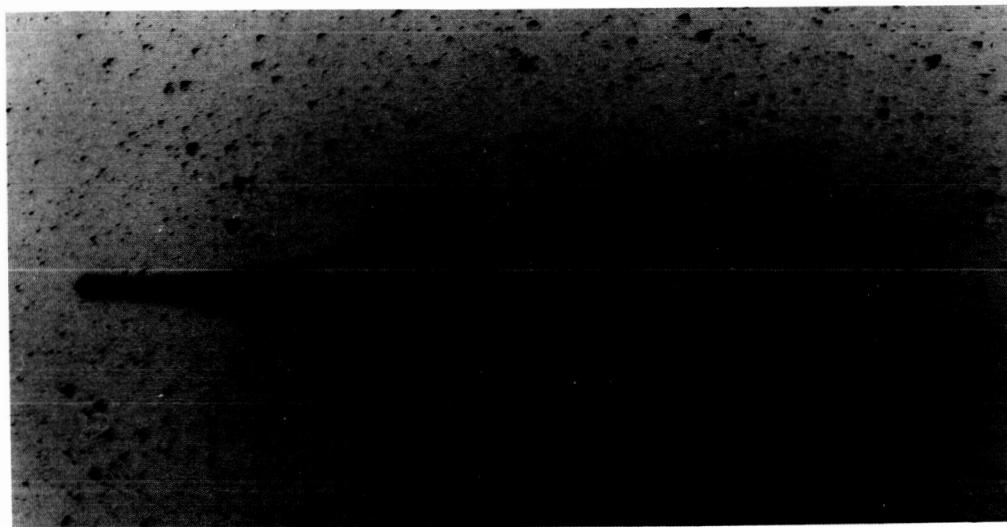


Figure 763. 1910 June 6.745; exposure 120 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 3.5$ E5

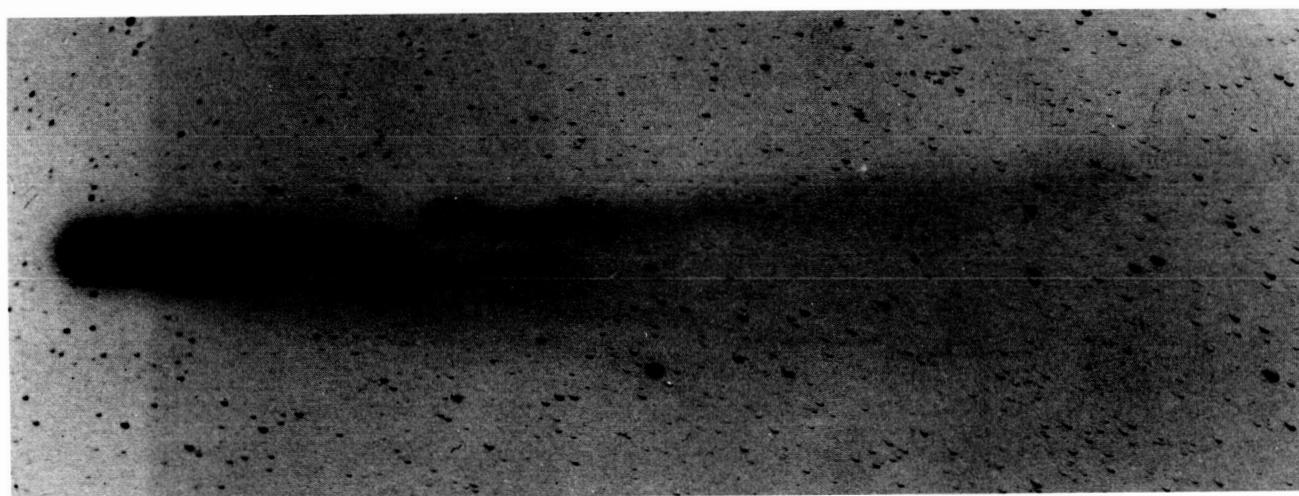


Figure 764. 1910 June 6.762; exposure 74 minutes; $r = 1.14$, $\Delta = 0.72$, $\theta = 79^\circ$, $\alpha = 61^\circ$, $S = 6.9$ E4

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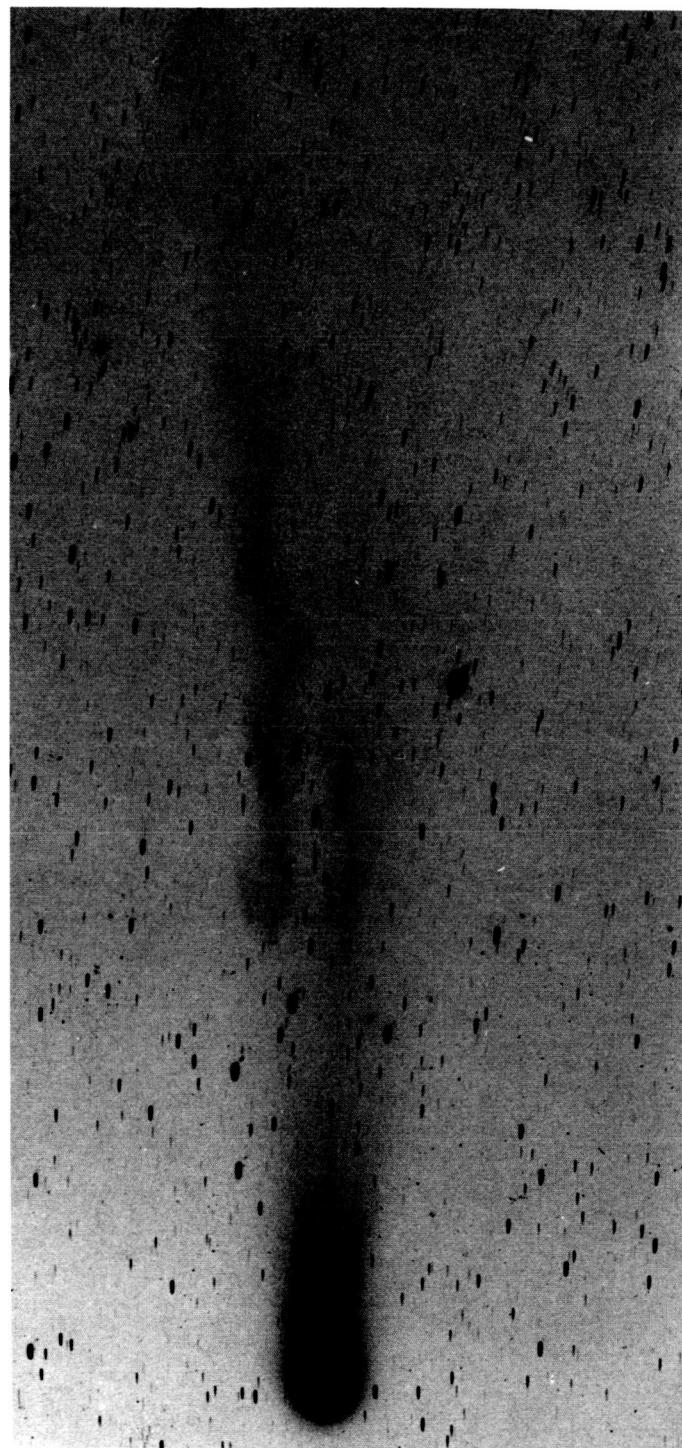


Figure 765. 1910 June 6.837; exposure 99 minutes; $r = 1.14$, $\Delta = 0.72$, $\theta = 79^\circ$, $\alpha = 61^\circ$, $S = 6.7$ E4

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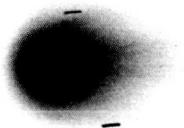


Figure 766-1. 1910 June 6.277; exposure 30 minutes; $r = 1.13$, $\Delta = 0.70$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 1.5 \text{ E}4$

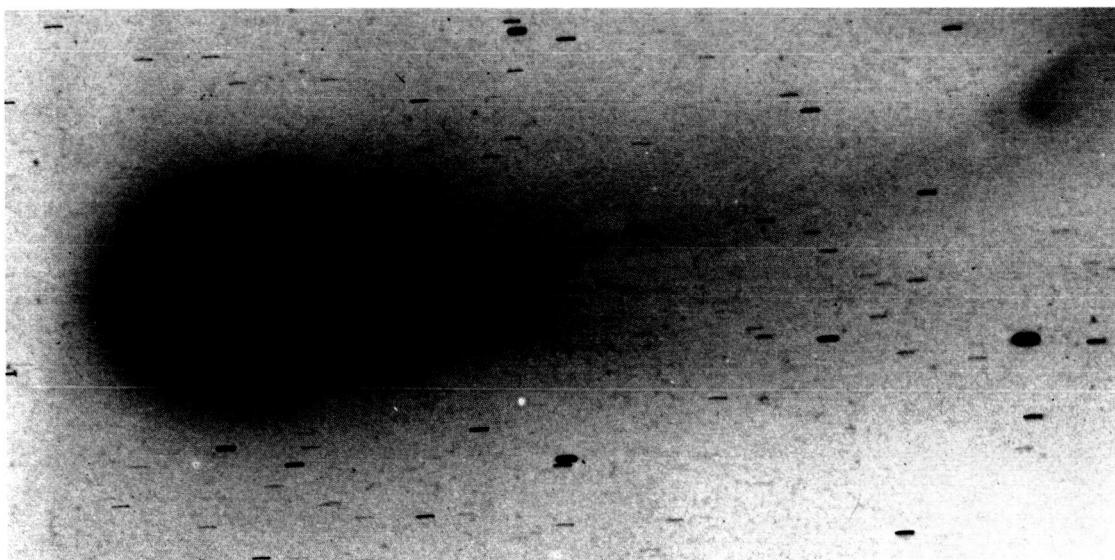


Figure 766-2. 1910 June 6.277; exposure 30 minutes; $r = 1.13$, $\Delta = 0.70$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 1.5 \text{ E}4$

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Figure 767-1. 1910 June 6.295; exposure 10 minutes; $r = 1.13$, $\Delta = 0.70$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 1.5 E4$

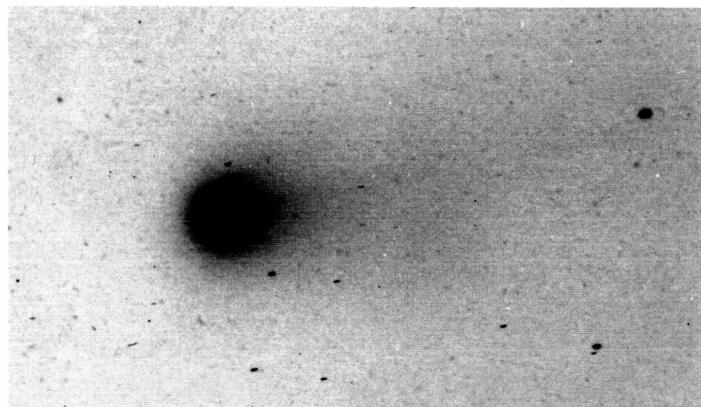


Figure 767-2. 1910 June 6.295; exposure 10 minutes; $r = 1.13$, $\Delta = 0.70$, $\theta = 80^\circ$, $\alpha = 62^\circ$, $S = 1.5 E4$

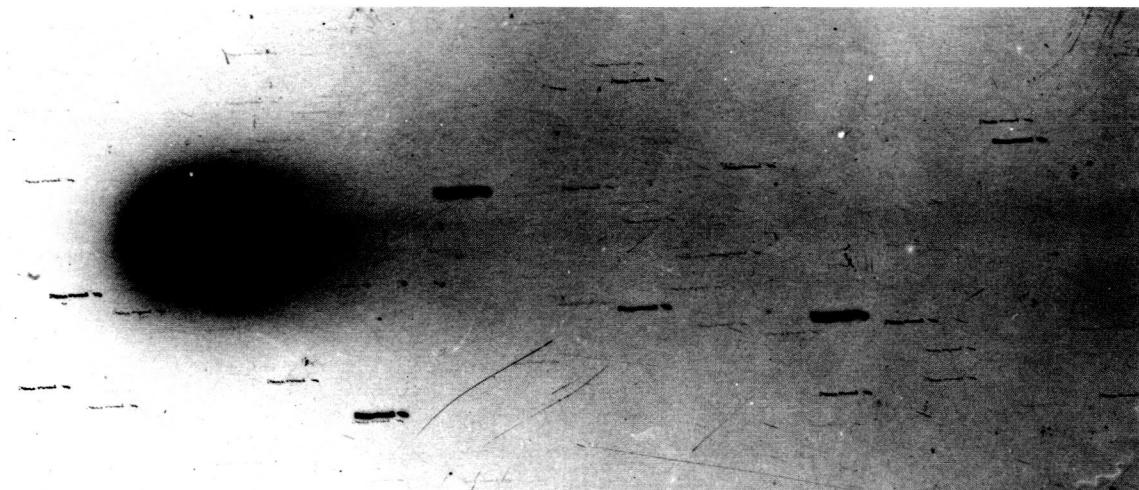


Figure 768. 1910 June 6.512; exposure 120 minutes; $r = 1.13$, $\Delta = 0.71$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 1.6 E4$

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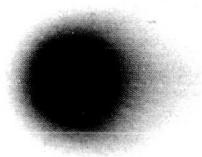


Figure 769-1. 1910 June 6.696; exposure 13 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 1.0 E4$

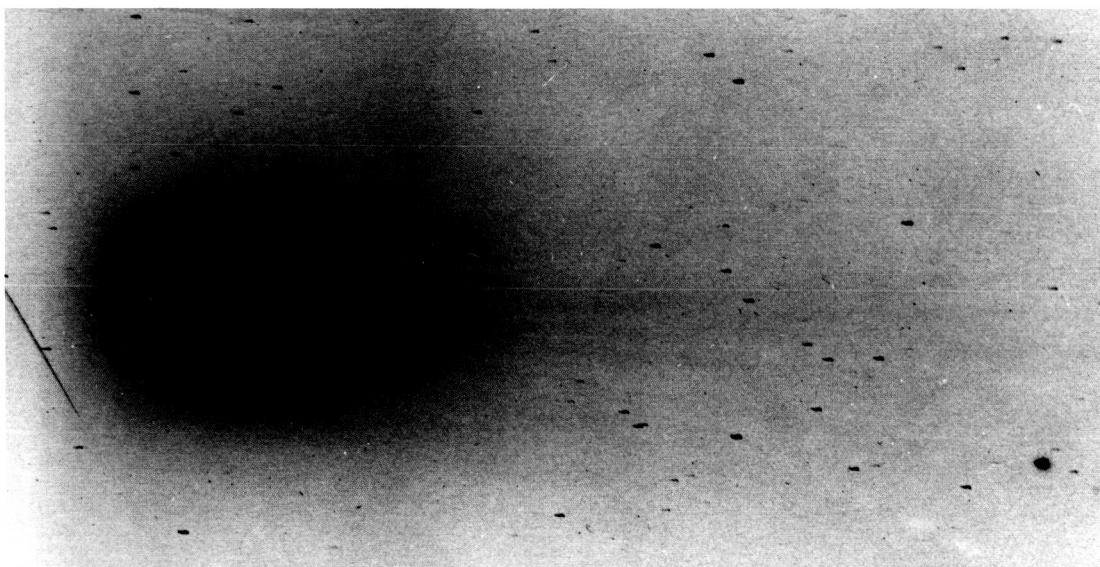


Figure 769-2. 1910 June 6.696; exposure 13 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 1.0 E4$

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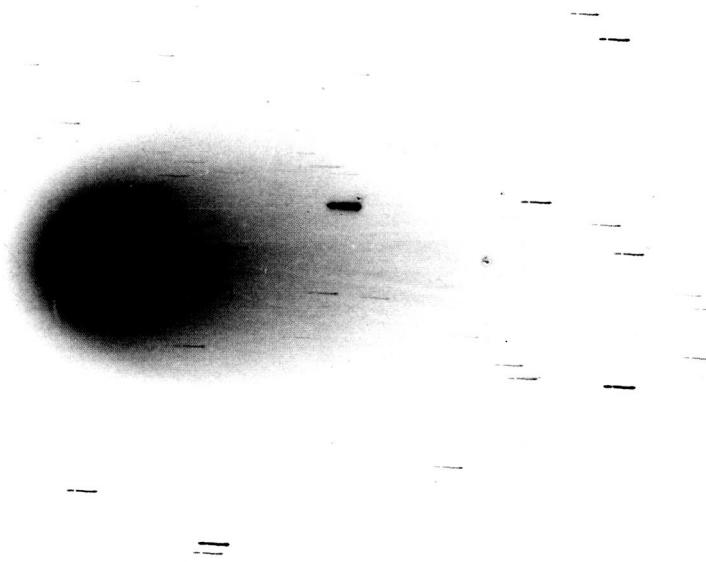


Figure 770-1. 1910 June 6.719; exposure 50 minutes; $r = 1.13$, $\Delta = 0.72$,
 $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 1.0$ E4

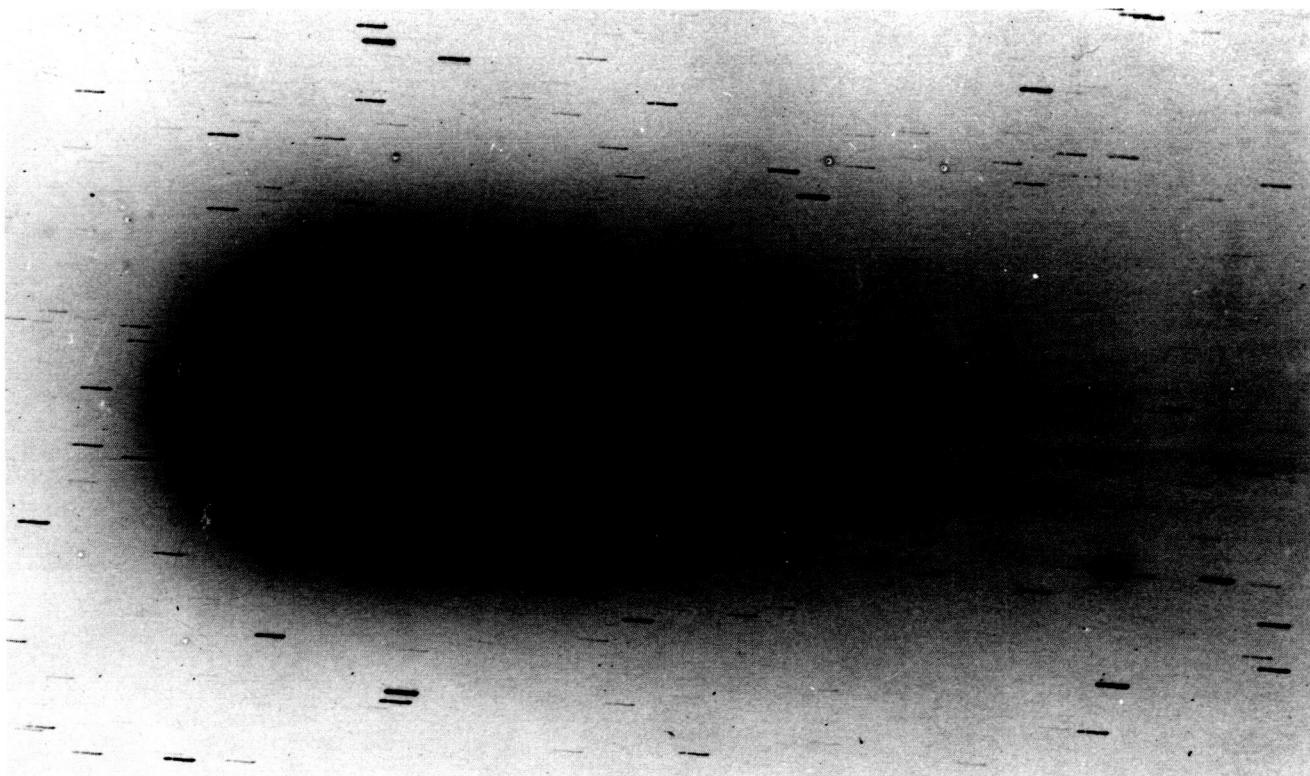


Figure 770-2. 1910 June 6719; exposure 50 minutes; $r = 1.13$, $\Delta = 0.72$, $\theta = 80^\circ$, $\alpha = 61^\circ$, $S = 1.0$ E4

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Figure 771-1. 1910 June 6.771; exposure 50 minutes; $r = 1.14$, $\Delta = 0.72$,
 $\theta = 79^\circ$, $\alpha = 61^\circ$, $S = 1.0 \text{ E}4$

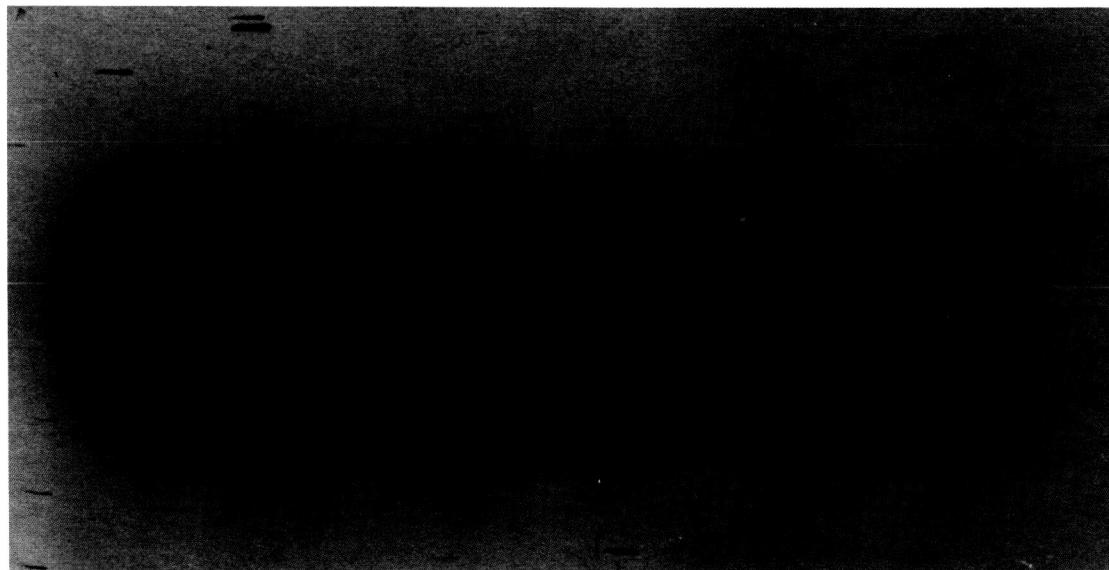


Figure 771-2. 1910 June 6.771; exposure 50 minutes; $r = 1.14$, $\Delta = 0.72$, $\theta = 79^\circ$, $\alpha = 61^\circ$,
 $S = 1.0 \text{ E}4$

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Figure 772. 1910 June 7.001; exposure 105 minutes; $r = 1.14$, $\Delta = 0.73$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 2.2 \text{ E}5$



Figure 773. 1910 June 7.061; exposure 115 minutes; $r = 1.14$, $\Delta = 0.73$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 3.8 \text{ E}5$

Figure 774-1. 1910 June 7.449; exposure 50 minutes; $r = 1.15$, $\Delta = 0.75$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 8.8 \text{ E}4$

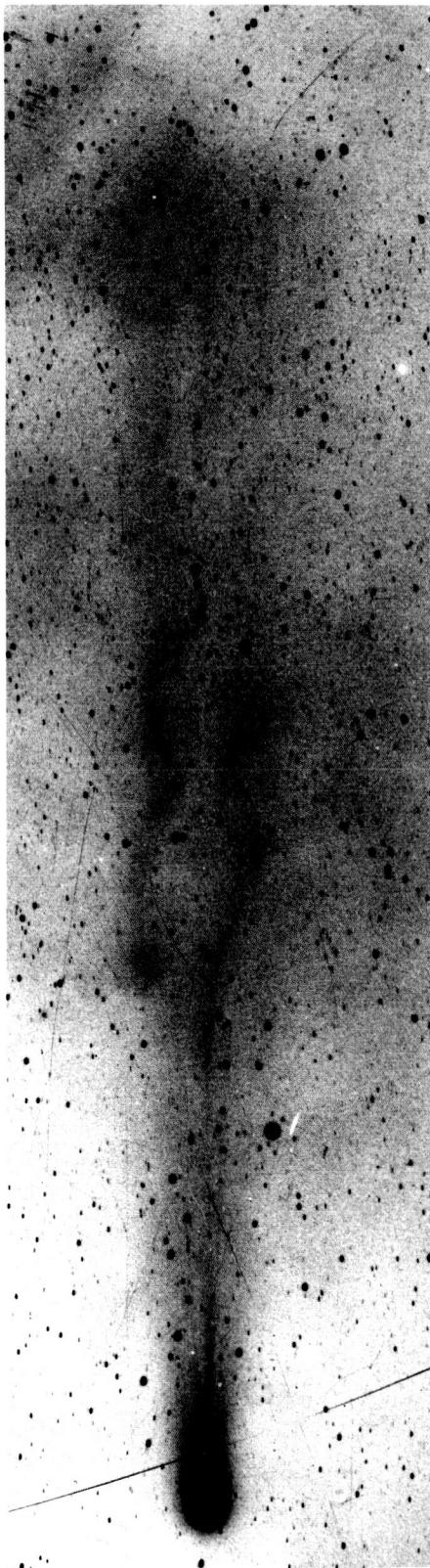
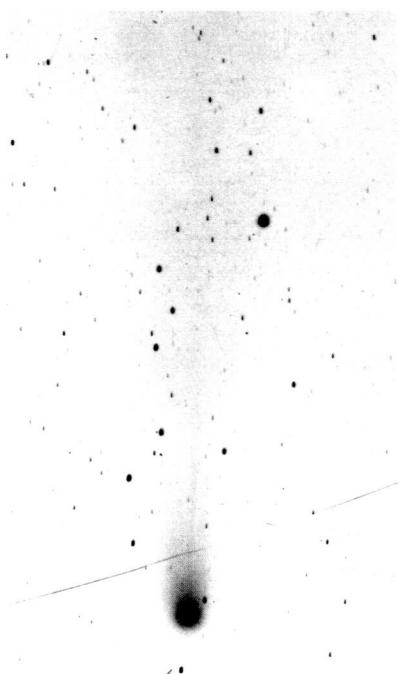


Figure 774-2. 1910 June 7.449; exposure 50 minutes; $r = 1.15$, $\Delta = 0.75$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 8.8 \text{ E}4$

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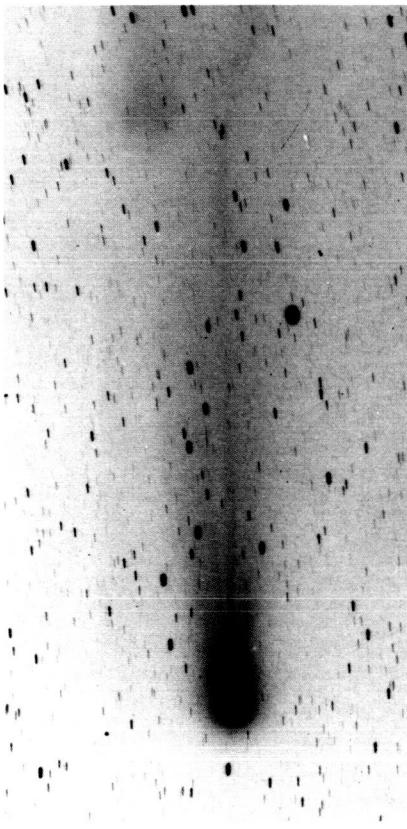


Figure 775-1. 1910 June 7.509; exposure 120 minutes; $r = 1.15$, $\Delta = 0.75$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 8.8$ E4

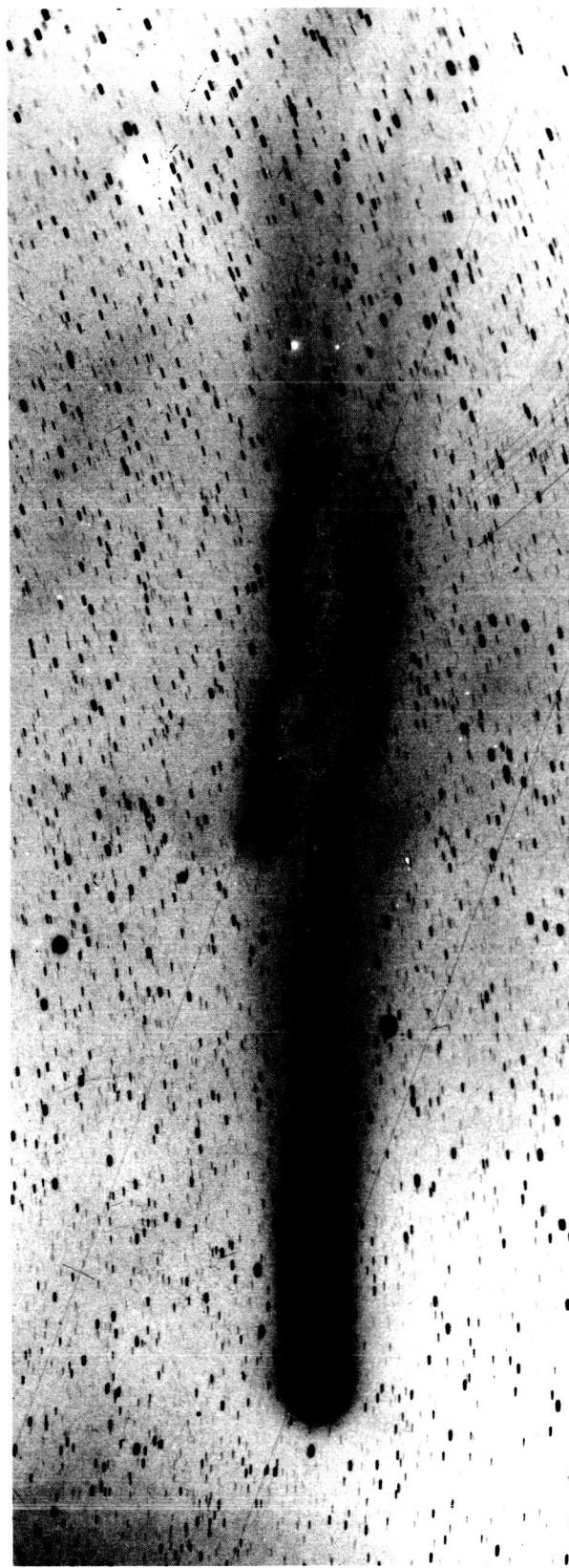


Figure 775-2. 1910 June 7.509; exposure 120 minutes; $r = 1.15$, $\Delta = 0.75$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 8.8$ E4

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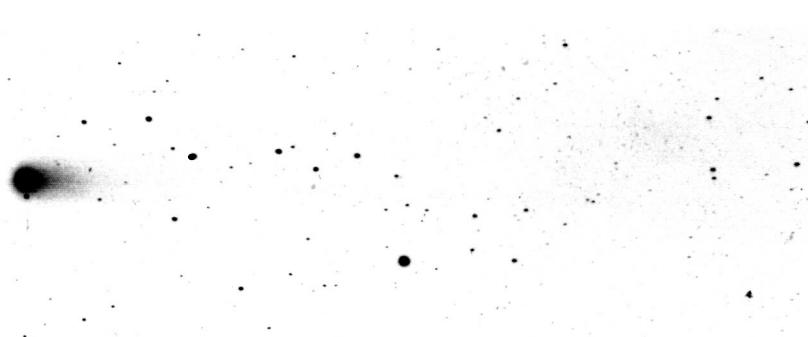


Figure 776. 1910 June 7.574; exposure 30 minutes; $r = 1.15$, $\Delta = 0.75$,
 $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 8.8$ E4



Figure 777. 1910 June 7.619; exposure 115 minutes; $r = 1.15$, $\Delta = 0.75$, $\theta = 79^\circ$,
 $\alpha = 60^\circ$, $S = 7.3$ E4

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Figure 778-1. 1910 June 7.619; exposure 115 minutes; $r = 1.15$, $\Delta = 0.75$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 4.4 \text{ E}4$



Figure 778-2. 1910 June 7.619; exposure 115 minutes; $r = 1.15$, $\Delta = 0.75$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 4.4 \text{ E}4$

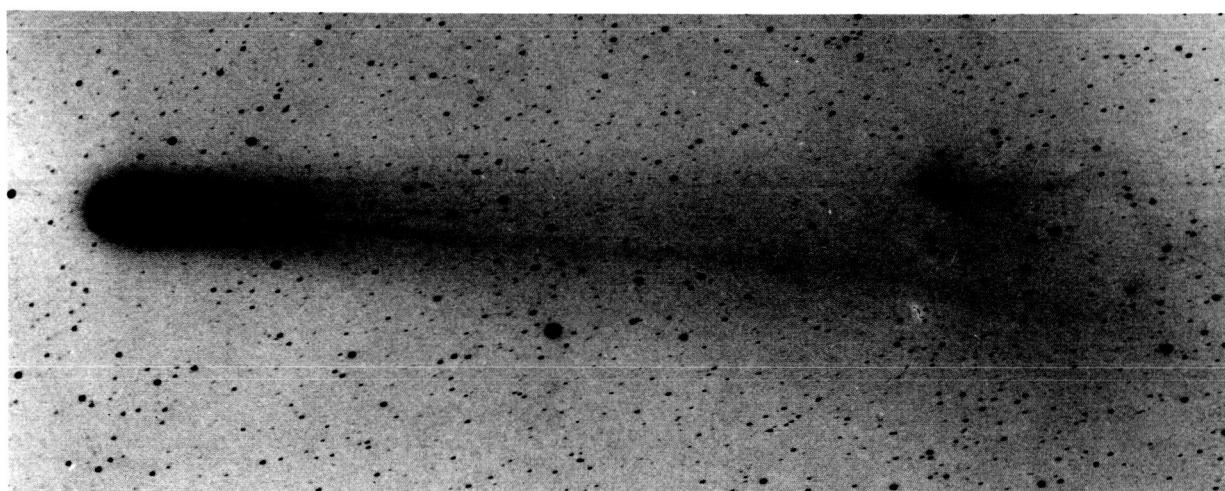


Figure 779. 1910 June 7.718; exposure 54 minutes; $r = 1.15$, $\Delta = 0.76$, $\theta = 79^\circ$, $\alpha = 59^\circ$, $S = 7.3 \text{ E}4$

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Figure 780-1. 1910 June 7.741; exposure 120 minutes; $r = 1.15$, $\Delta = 0.76$, $\theta = 79^\circ$,
 $\alpha = 59^\circ$, $S = 8.7 \text{ E4}$

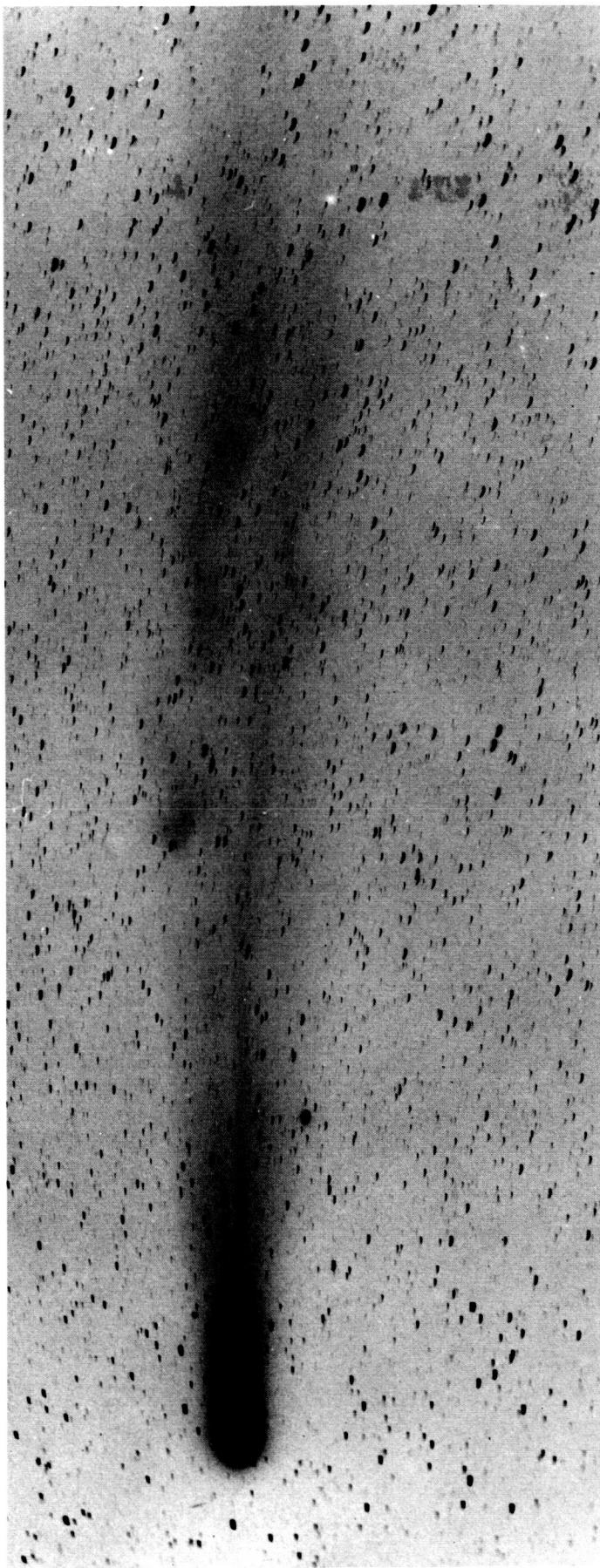


Figure 780-2. 1910 June 7.741; exposure 120 minutes; $r = 1.15$, $\Delta = 0.76$, $\theta = 79^\circ$, $\alpha = 59^\circ$, $S = 8.7 \text{ E4}$

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Figure 781-1. 1910 June 7.760; exposure 65 minutes; $r = 1.15$, $\Delta = 0.76$, $\theta = 79^\circ$,
 $\alpha = 59^\circ$, $S = 7.3$ E4

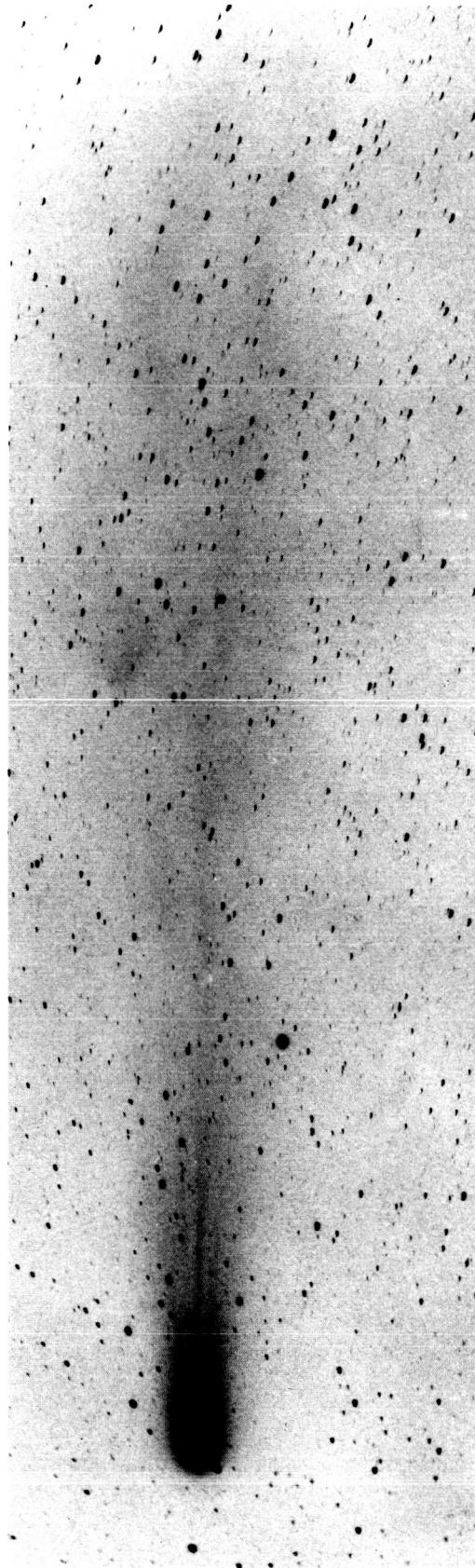


Figure 781-2. 1910 June 7.760; exposure 65 minutes; $r = 1.15$, $\Delta = 0.76$, $\theta = 79^\circ$, $\alpha = 59^\circ$, $S = 7.3$ E4

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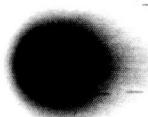


Figure 782-1. 1910 June 7.284; exposure 30 minutes; $r = 1.14$, $\Delta = 0.74$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 1.6 \text{ E}4$

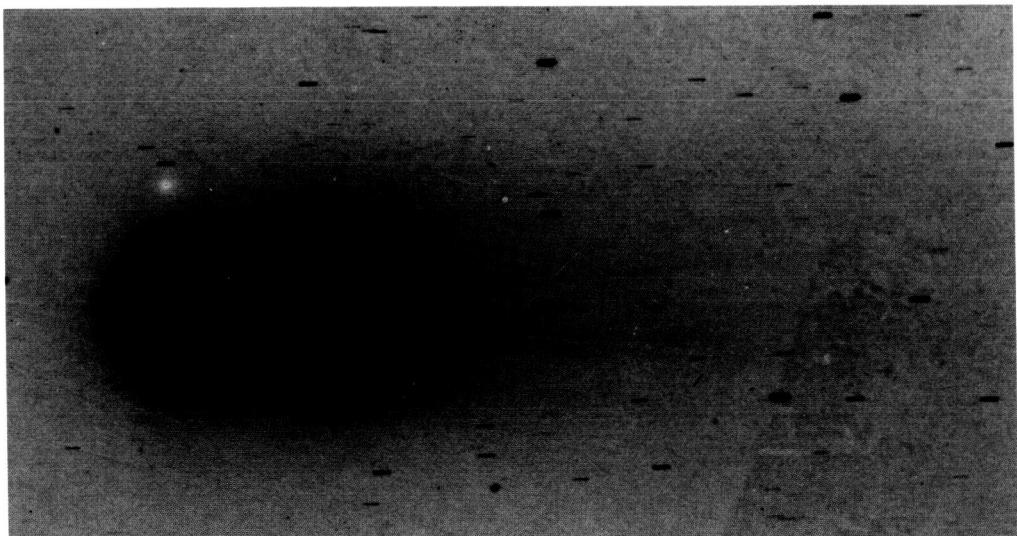


Figure 782-2. 1910 June 7.284; exposure 30 minutes; $r = 1.14$, $\Delta = 0.74$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 1.6 \text{ E}4$

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Figure 783-1. 1910 June 7.300;
exposure 10 minutes; $r = 1.14$,
 $\Delta = 0.74$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 1.6 \text{ E}4$

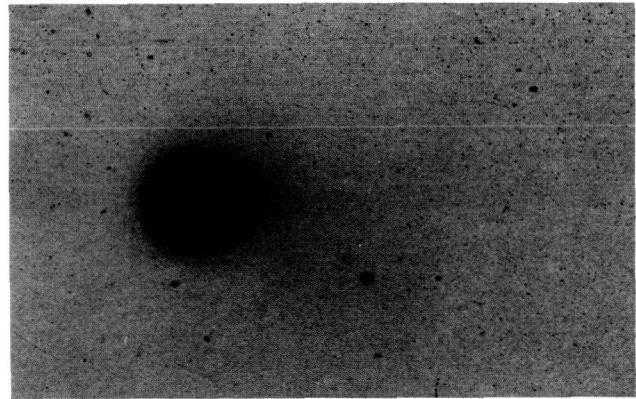


Figure 783-2. 1910 June 7.300; exposure 10 minutes;
 $r = 1.14$, $\Delta = 0.74$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 1.6 \text{ E}4$

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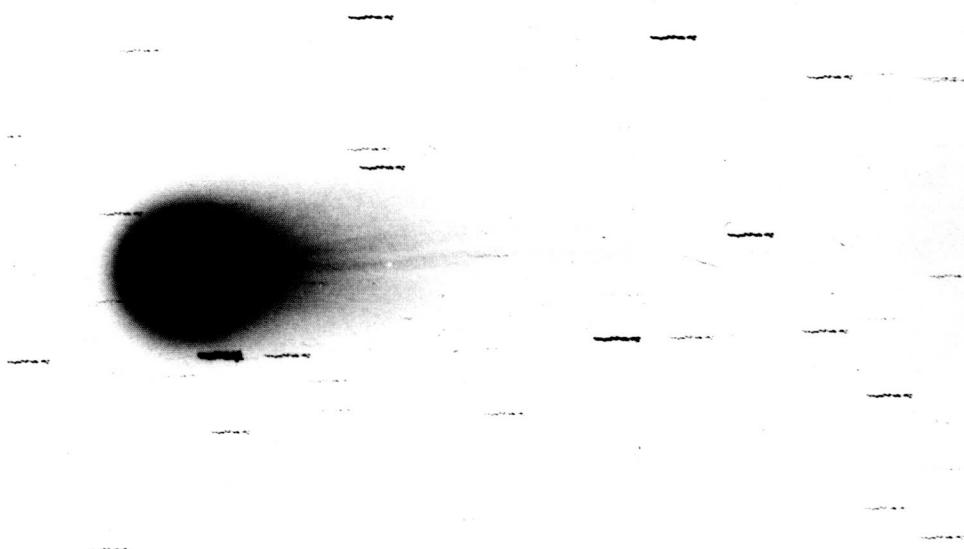


Figure 784-1. 1910 June 7.535; exposure 120 minutes; $r = 1.15$, $\Delta = 0.75$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 1.6$ E4

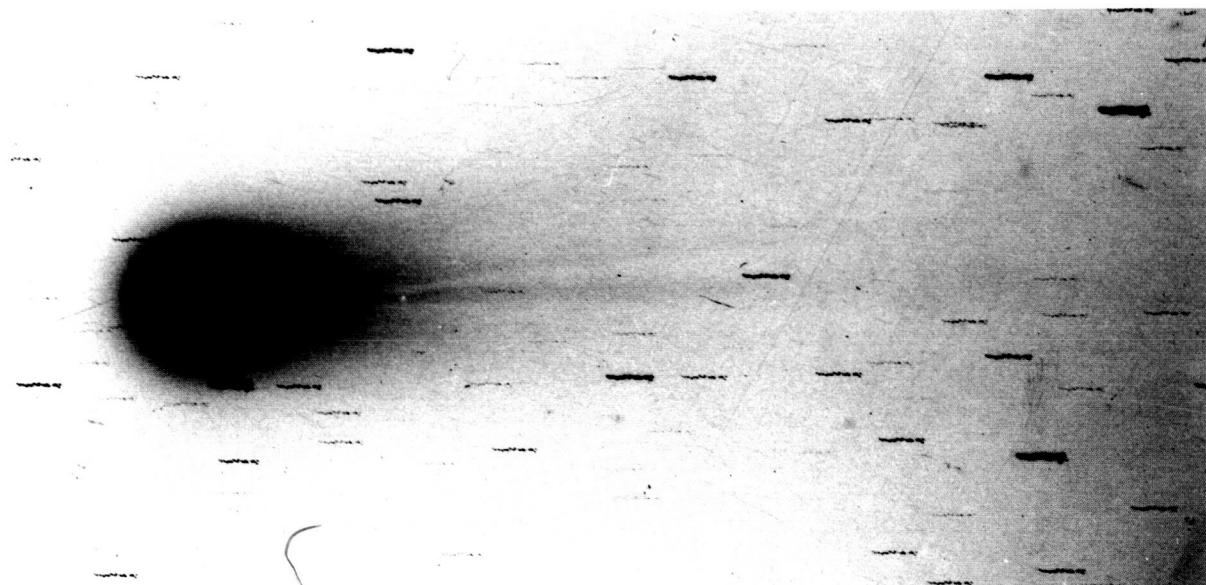


Figure 784-2. 1910 June 7.535; exposure 120 minutes; $r = 1.15$, $\Delta = 0.75$, $\theta = 79^\circ$, $\alpha = 60^\circ$, $S = 1.6$ E4

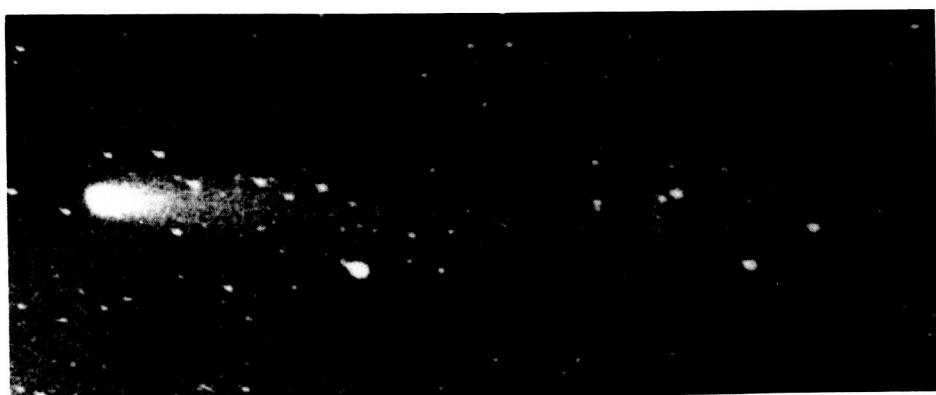


Figure 785. 1910 June 8.056; exposure 100 minutes; $r = 1.16$, $\Delta = 0.77$, $\theta = 79^\circ$, $\alpha = 59^\circ$, $S = 1.2$ E5

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Figure 786-1. 1910 June 8.479; exposure 120 minutes; $r = 1.16$, $\Delta = 0.79$, $\theta = 79^\circ$,
 $\alpha = 58^\circ$, $S = 9.2$ E4



Figure 786-2. 1910 June 8.479; exposure 120 minutes; $r = 1.16$, $\Delta = 0.79$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 9.2$ E4

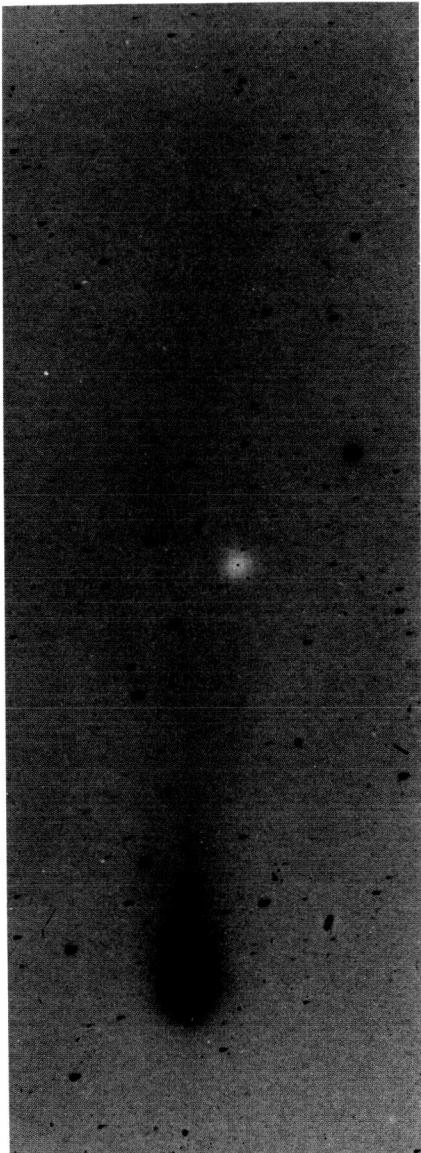


Figure 787. 1910 June 8.600; exposure 60 minutes; $r = 1.16$, $\Delta = 0.79$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 4.7 \text{ E}4$

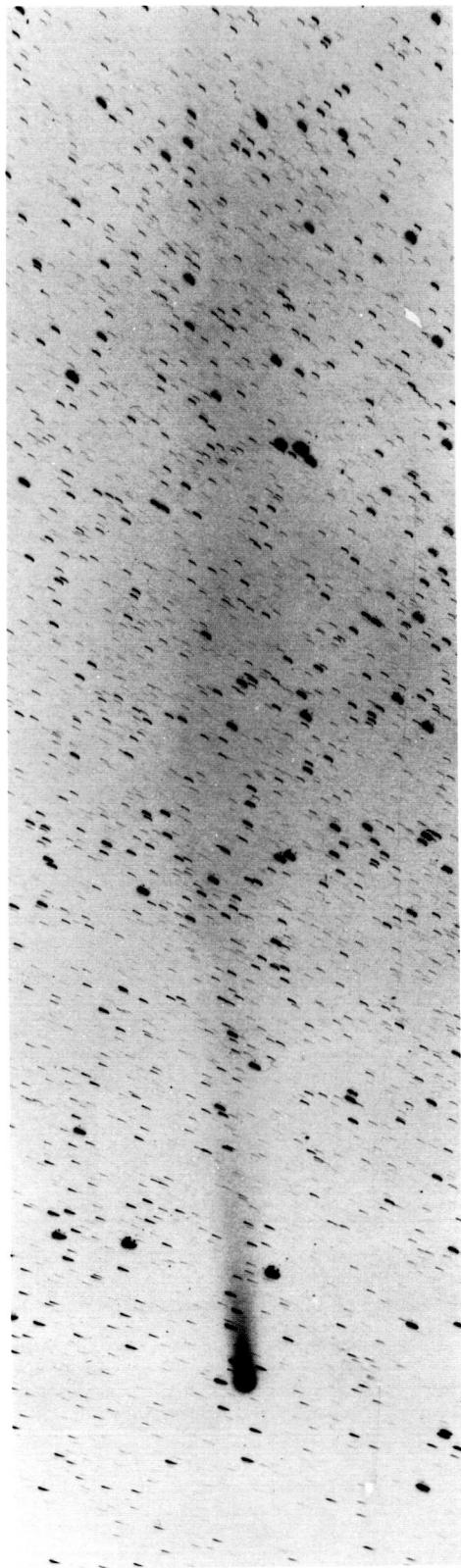


Figure 788. 1910 June 8.715; exposure 124 minutes; $r = 1.17$, $\Delta = 0.79$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 2.3 \text{ E}5$

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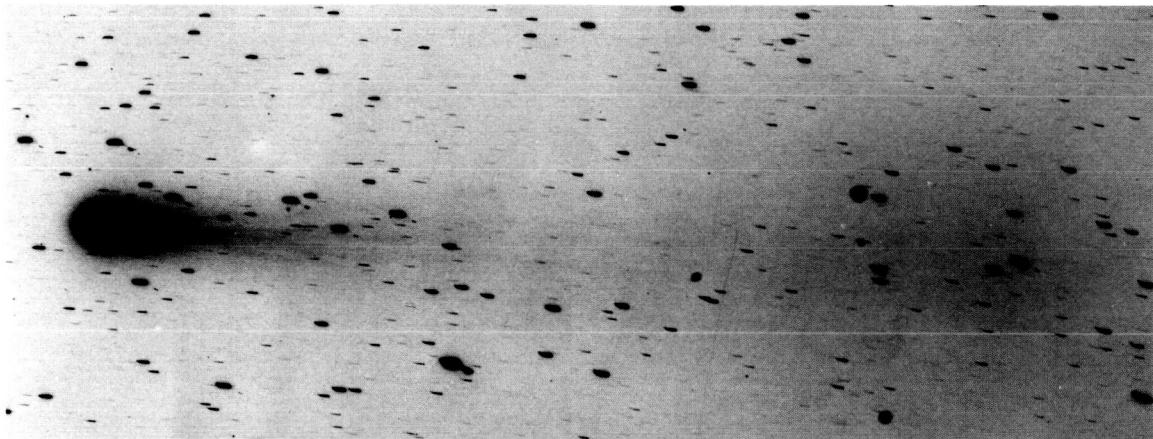


Figure 789-1. 1910 June 8.715; exposure 120 minutes; $r = 1.17$, $\Delta = 0.79$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 6.7 \text{ E4}$

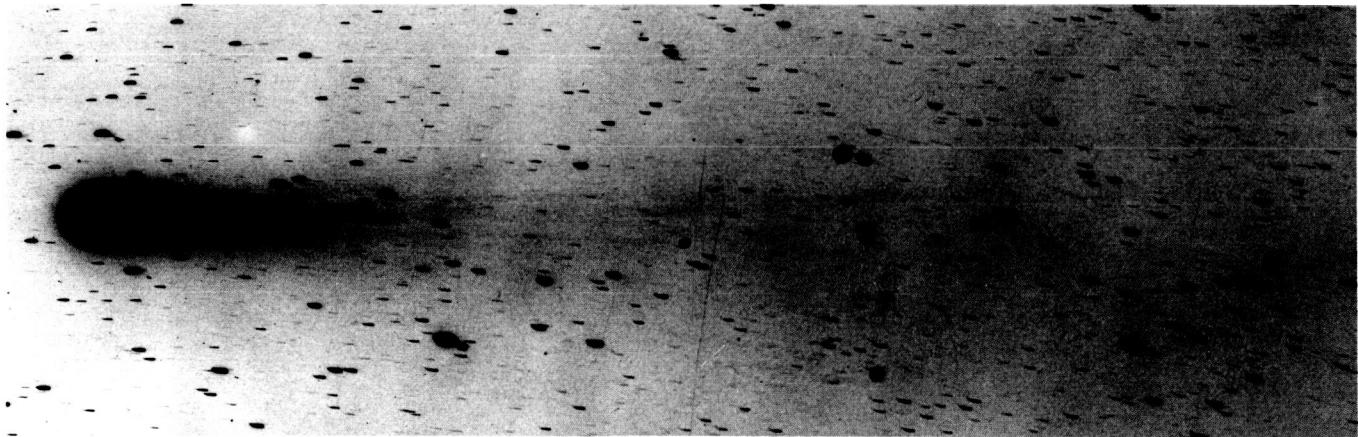


Figure 789-2. 1910 June 8.715, exposure 120 minutes; $r = 1.17$, $\Delta = 0.79$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 6.7 \text{ E4}$

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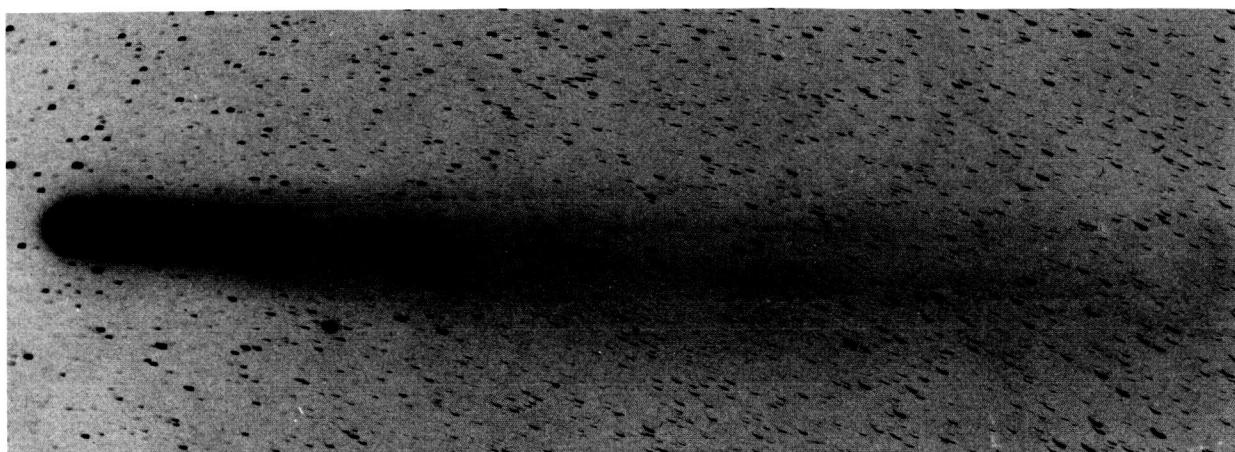


Figure 790. 1910 June 8.745; exposure 120 minutes; $r = 1.17$, $\Delta = 0.80$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 9.1 \text{ E}4$

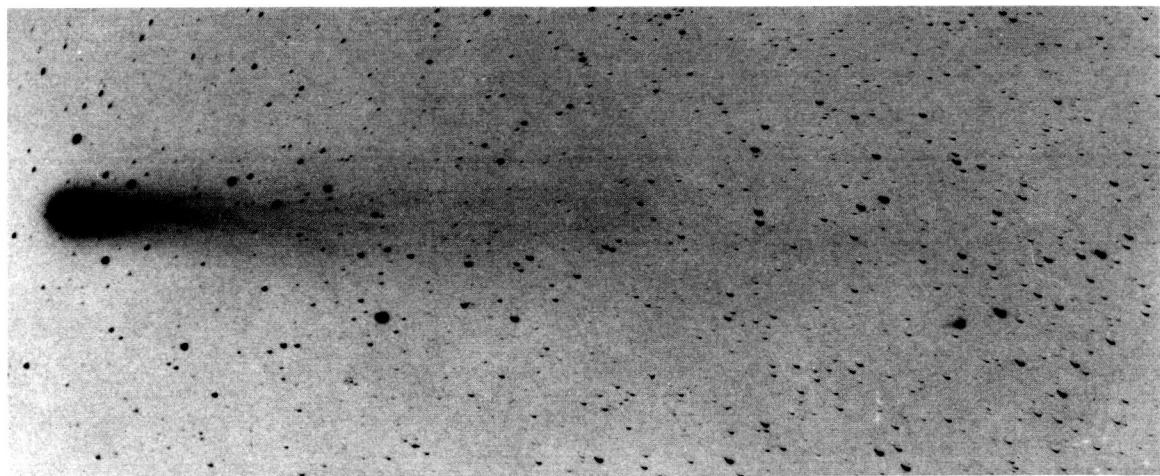


Figure 791. 1910 June 8.759; exposure 60 minutes; $r = 1.17$, $\Delta = 0.80$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 7.7 \text{ E}4$

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Figure 792-1. 1910 June 8.284;
exposure 15 minutes; $r = 1.16$,
 $\Delta = 0.78$, $\theta = 79^\circ$, $\alpha = 59^\circ$, $S =$
1.7 E4

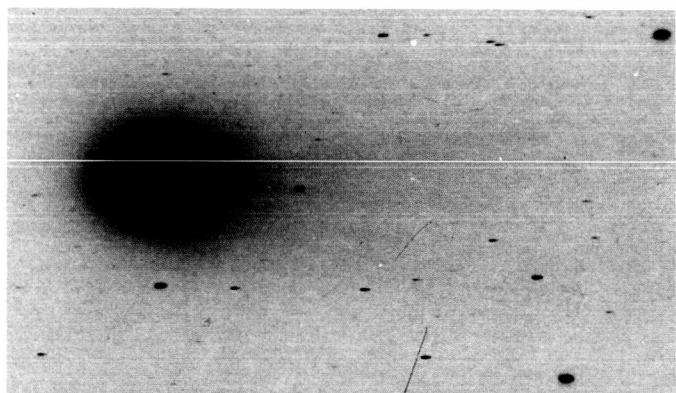


Figure 792-2. 1910 June 8.284; exposure 15 minutes; $r =$
 1.16 , $\Delta = 0.78$, $\theta = 79^\circ$, $\alpha = 59^\circ$, $S = 1.7$ E4

Figure 793. 1910 June 8.518; exposure 120 minutes; $r =$
 1.16 , $\Delta = 0.79$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 1.7$ E4

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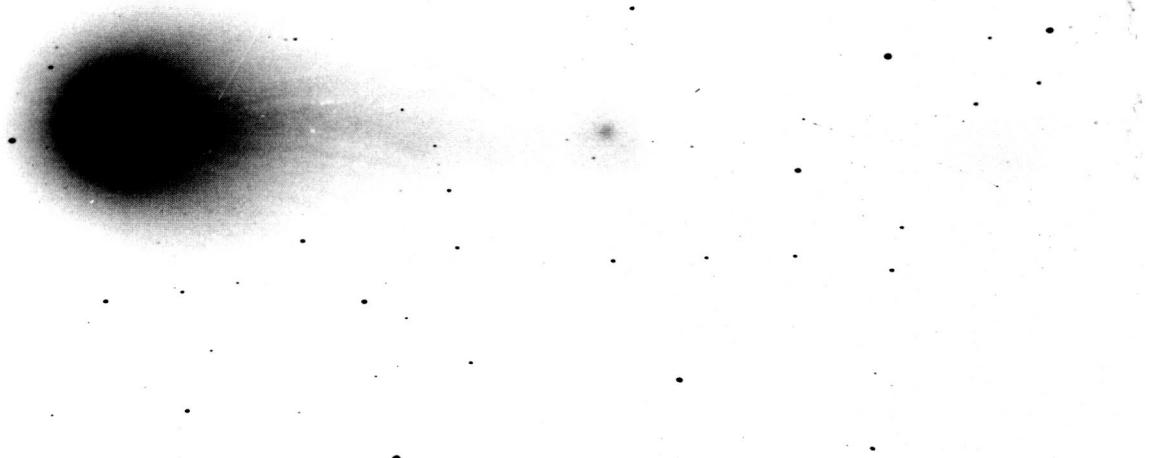


Figure 794-1. 1910 June 8.698; exposure 13 minutes; $r = 1.17$, $\Delta = 0.79$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 1.1 \text{ E}4$

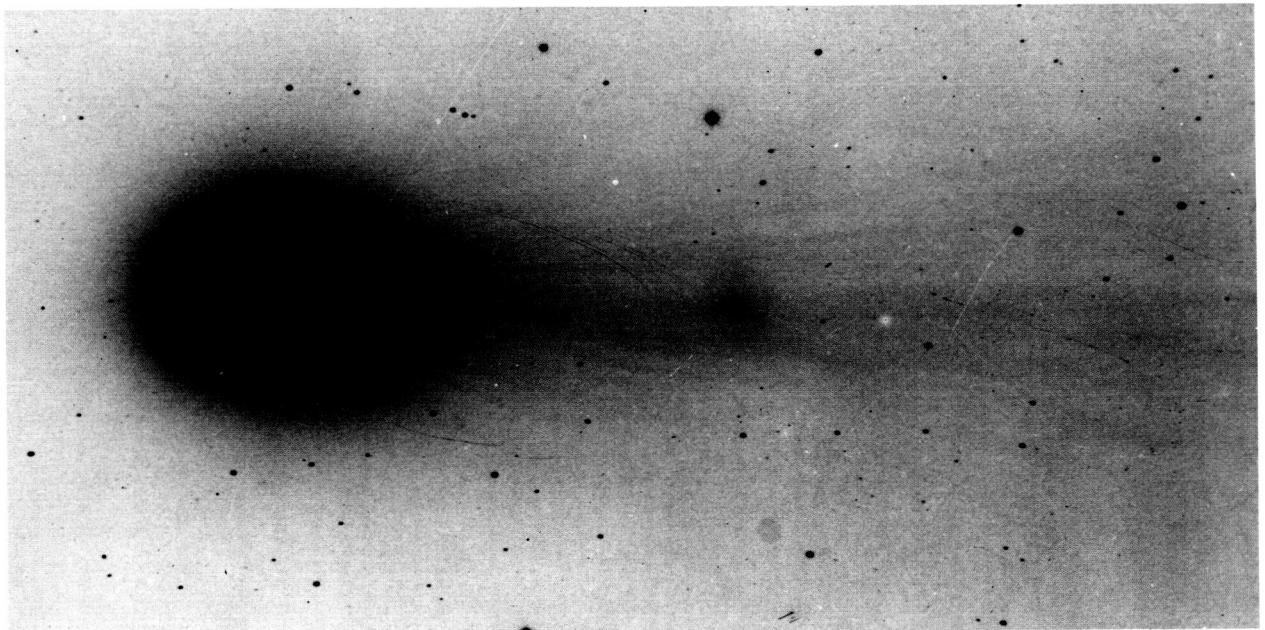


Figure 794-2. 1910 June 8.698; exposure 13 minutes; $r = 1.17$, $\Delta = 0.79$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 1.1 \text{ E}4$

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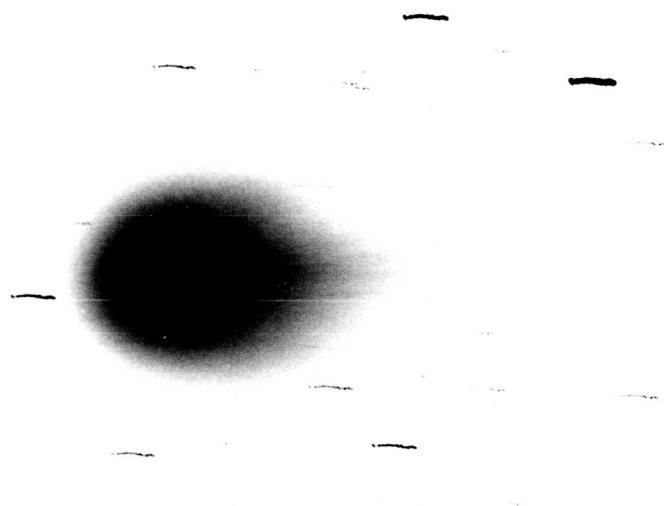


Figure 795-1. 1910 June 8.732; exposure 22 minutes; $r = 1.17$,
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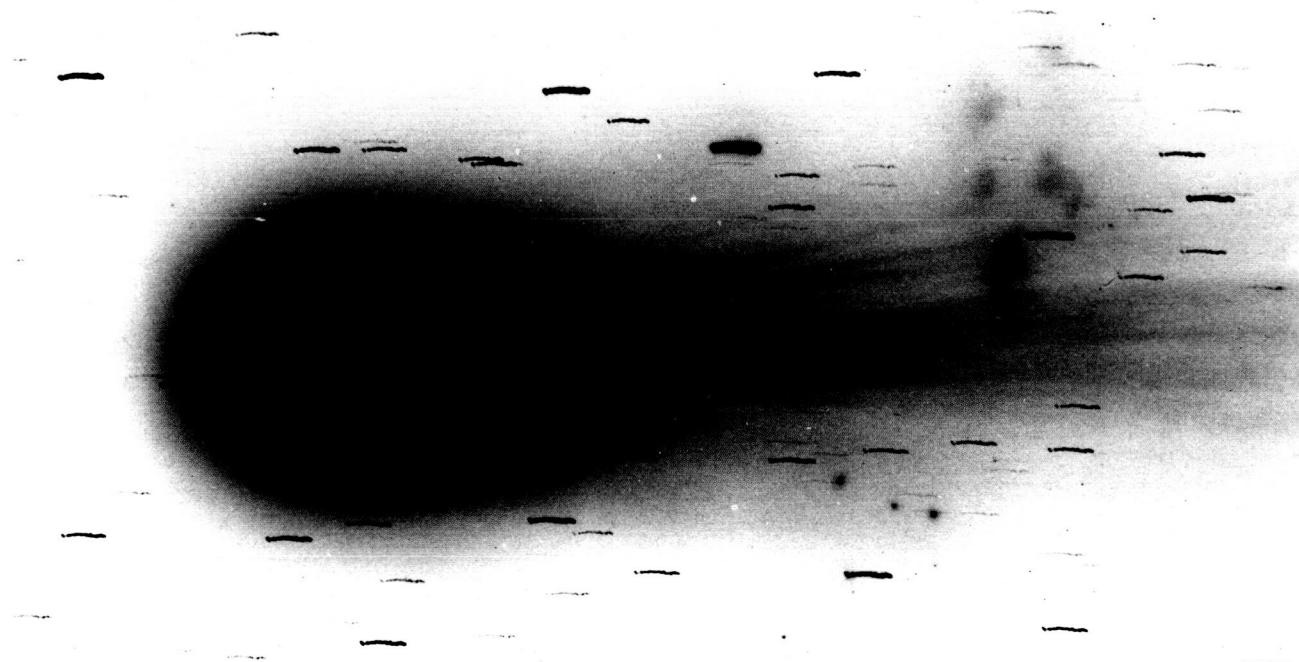


Figure 795-2. 1910 June 8.732; exposure 22 minutes; $r = 1.17$, $\Delta = 0.80$, $\theta = 79^\circ$, $\alpha = 58^\circ$, $S = 1.1 E4$

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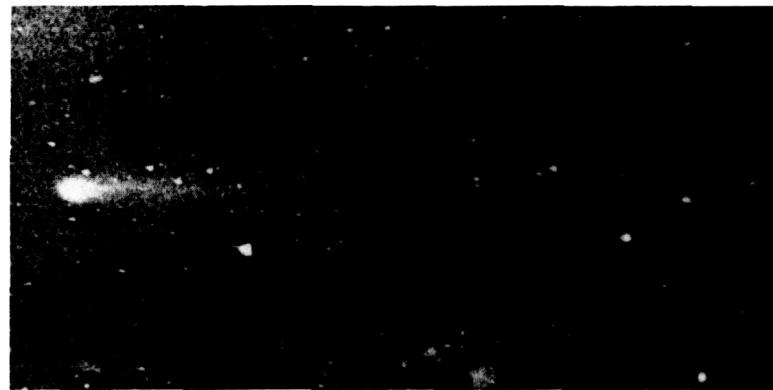


Figure 796. 1910 June 9.058; exposure 102 minutes; $r = 1.17$,
 $\Delta = 0.81$, $\theta = 79^\circ$, $\alpha = 58^\circ$, S = 1.2 E5



Figure 797. 1910 June 9.499; exposure 133 minutes; $r = 1.18$, $\Delta = 0.82$, $\theta = 79^\circ$, $\alpha = 57^\circ$,
S = 9.7 E4

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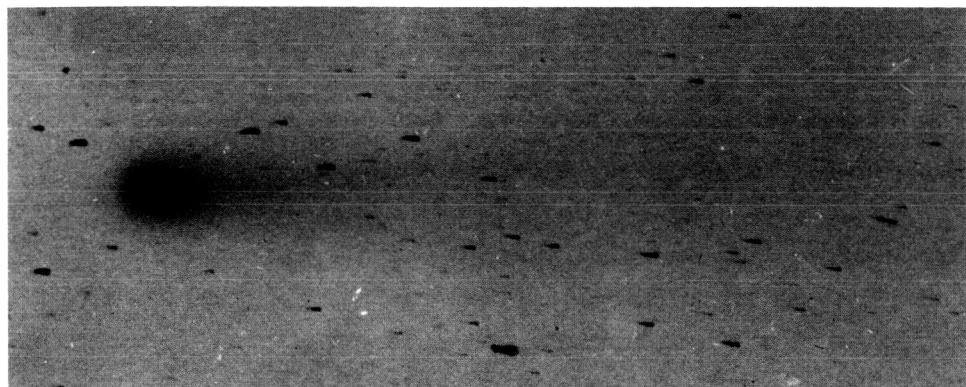


Figure 798-1. 1910 June 9.655; exposure 105 minutes; $r = 1.18$, $\Delta = 0.83$, $\theta = 79^\circ$, $\alpha = 57^\circ$, $S = 4.9$ E4

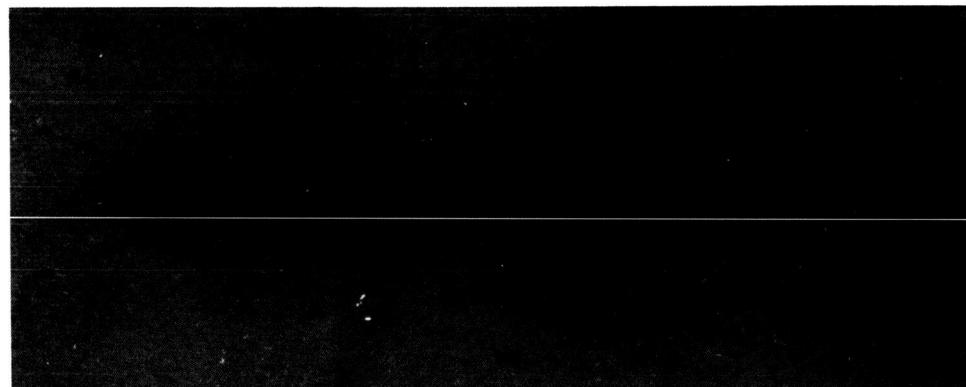


Figure 798-2. 1910 June 9.655; exposure 105 minutes; $r = 1.18$, $\Delta = 0.83$, $\theta = 79^\circ$, $\alpha = 57^\circ$, $S = 4.9$ E4

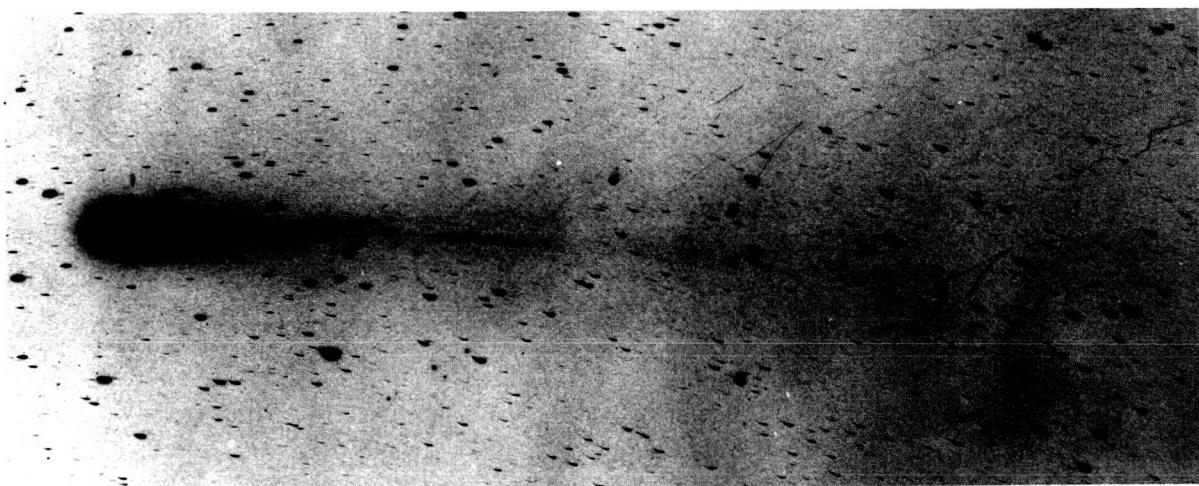


Figure 799. 1910 June 9.696; exposure 60 minutes; $r = 1.18$, $\Delta = 0.83$, $\theta = 79^\circ$, $\alpha = 57^\circ$, $S = 7.0$ E4

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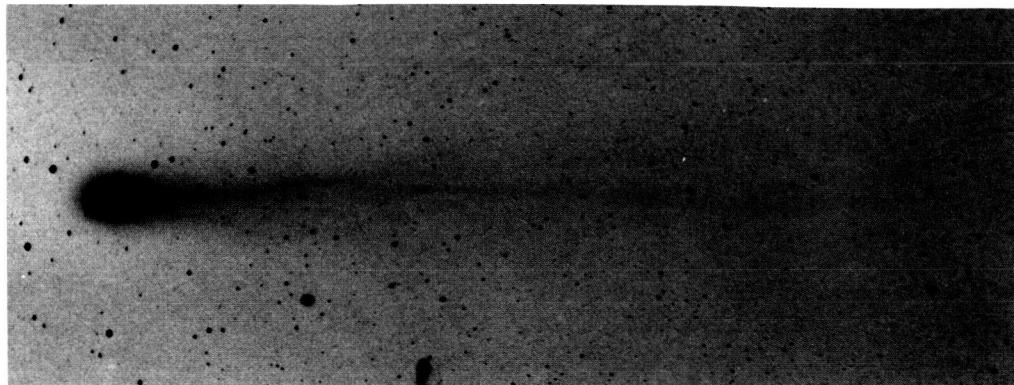


Figure 800. 1910 June 9.725; exposure 40 minutes; $r = 1.18$, $\Delta = 0.83$, $\theta = 78^\circ$, $\alpha = 57^\circ$, $S = 8.0$ E4

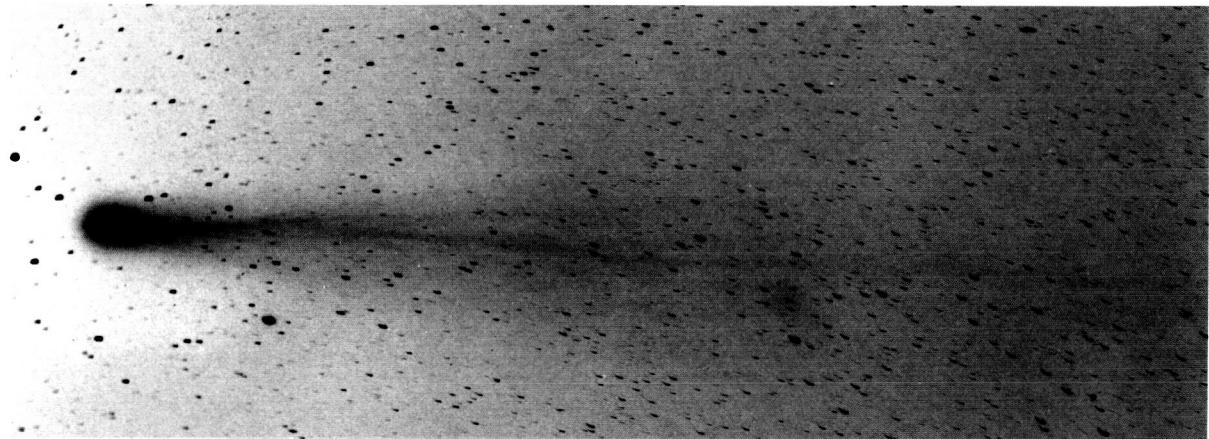


Figure 801. 1910 June 9.746; exposure 102 minutes; $r = 1.18$, $\Delta = 0.83$, $\theta = 78^\circ$, $\alpha = 57^\circ$, $S = 9.5$ E4

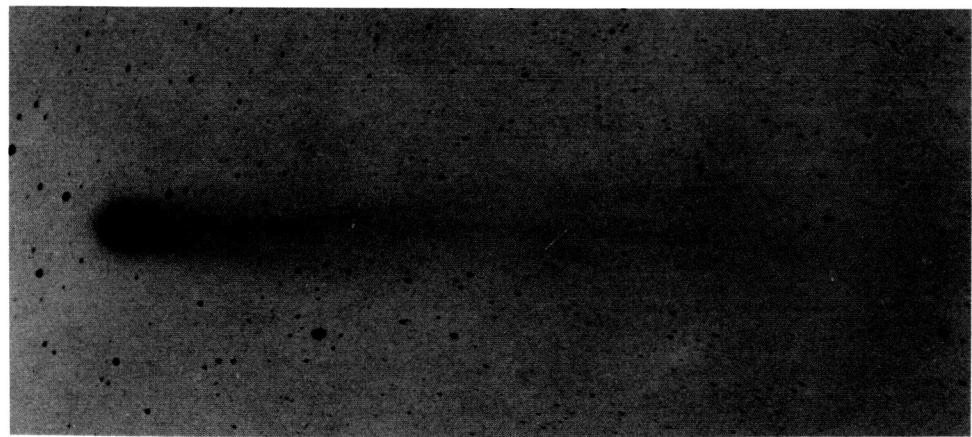


Figure 802. 1910 June 9.761; exposure 61 minutes; $r = 1.18$, $\Delta = 0.83$, $\theta = 78^\circ$, $\alpha = 57^\circ$, $S = 8.0$ E4

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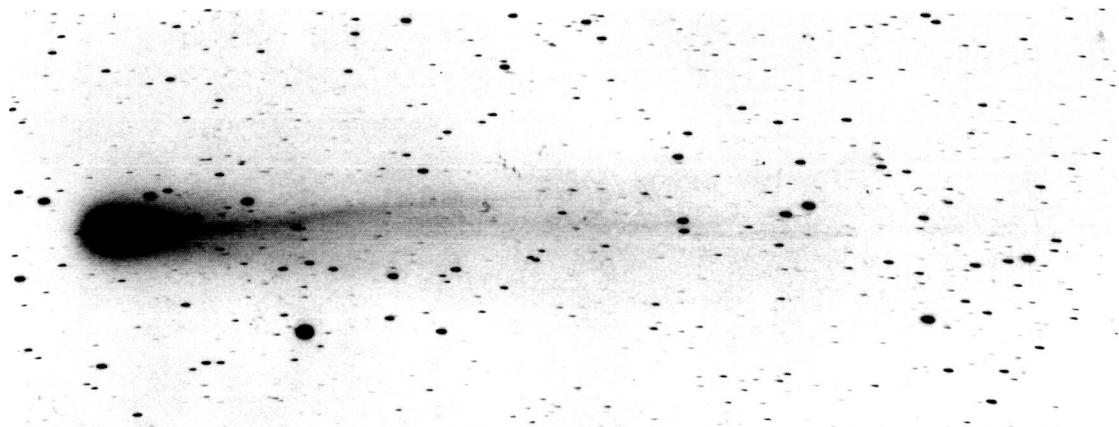


Figure 803. 1910 June 9.812; exposure 100 minutes; $r = 1.18$, $\Delta = 0.84$, $\theta = 78^\circ$, $\alpha = 57^\circ$, $S = 1.6 \text{ E}5$

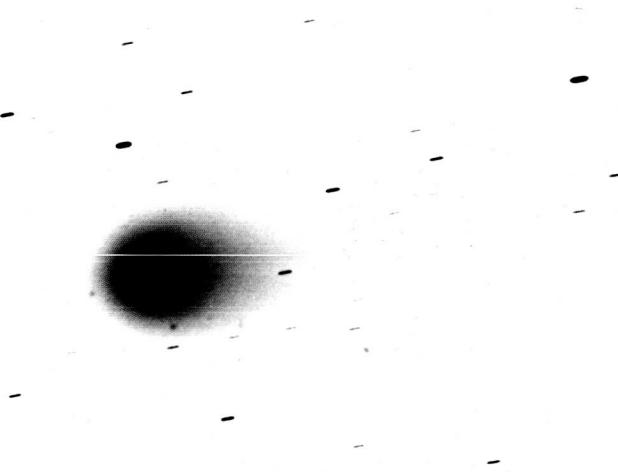


Figure 804-1. 1910 June 9.302; exposure 30 minutes; $r = 1.17$, $\Delta = 0.82$, $\theta = 79^\circ$, $\alpha = 57^\circ$, $S = 1.8 \text{ E}4$

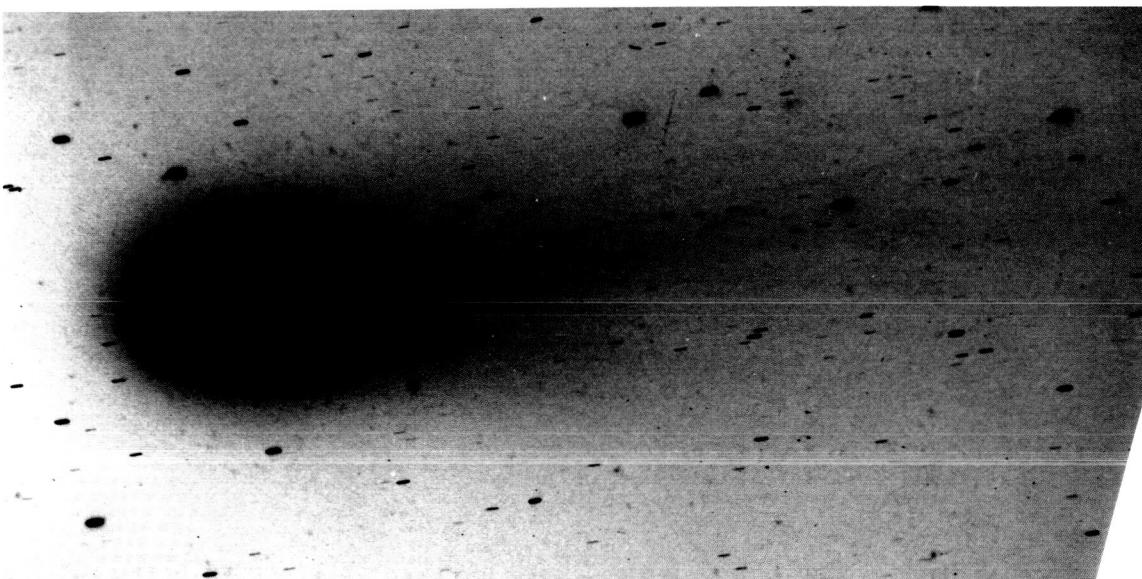


Figure 804-2. 1910 June 9.302; exposure 30 minutes; $r = 1.17$, $\Delta = 0.82$, $\theta = 79^\circ$, $\alpha = 57^\circ$, $S = 1.8 \text{ E}4$

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Figure 805-1. 1910 June 9.322; exposure
10 minutes; $r = 1.17$, $\Delta = 0.82$, $\theta = 79^\circ$,
 $\alpha = 57^\circ$, $S = 1.8 E4$

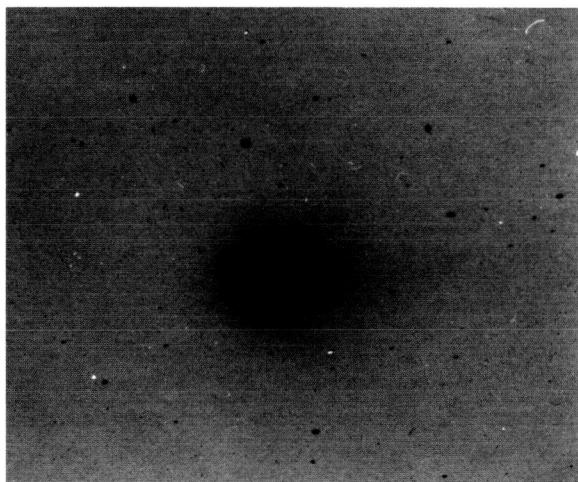


Figure 805-2. 1910 June 9.322; exposure 10
minutes; $r = 1.17$, $\Delta = 0.82$, $\theta = 79^\circ$, $\alpha = 57^\circ$,
 $S = 1.8 E4$



Figure 806. 1910 June 9.511; ex-
posure 120 minutes; $r = 1.18$, $\Delta =$
 0.82 , $\theta = 79^\circ$, $\alpha = 57^\circ$, $S = 1.8 E4$

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Figure 807. 1910 June 9.702; exposure 6 minutes; $r = 1.18$, $\Delta = 0.83$, $\theta = 79^\circ$, $\alpha = 57^\circ$, S = 1.2 E4

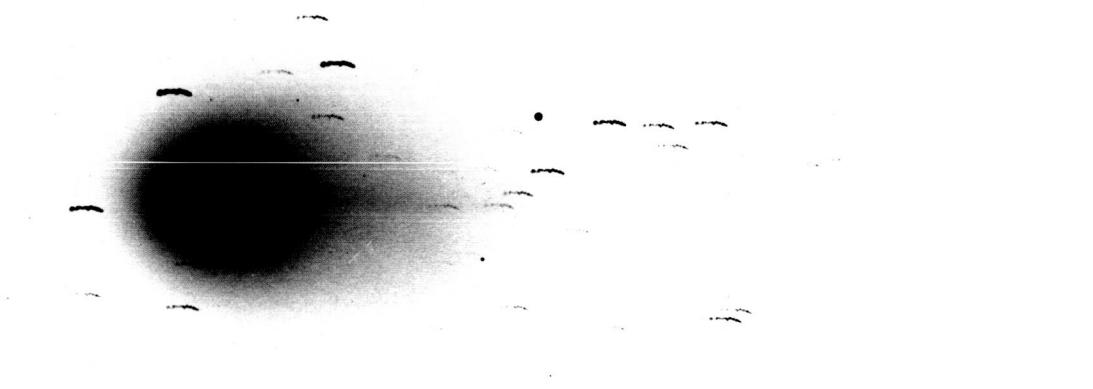


Figure 808-1. 1910 June 9.736; exposure 72 minutes; $r = 1.18$, $\Delta = 0.83$, $\theta = 78^\circ$, $\alpha = 57^\circ$, S = 1.2 E4



Figure 808-2. 1910 June 9.736; exposure 72 minutes; $r = 1.18$, $\Delta = 0.83$, $\theta = 78^\circ$, $\alpha = 57^\circ$, S = 1.2 E4

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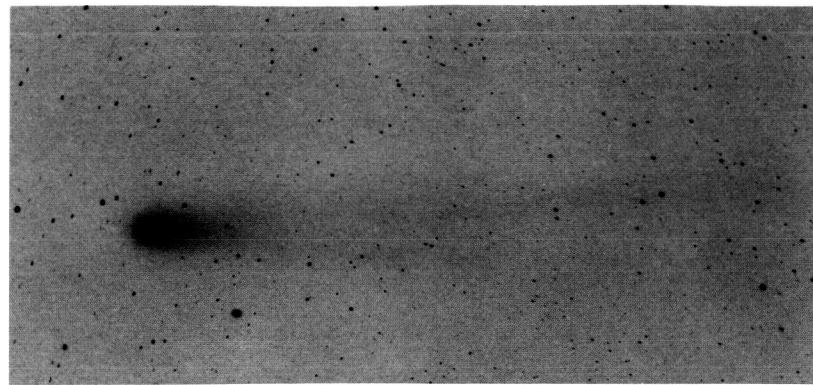


Figure 809. 1910 June 10.713; exposure 16 minutes; $r = 1.20$, $\Delta = 0.87$,
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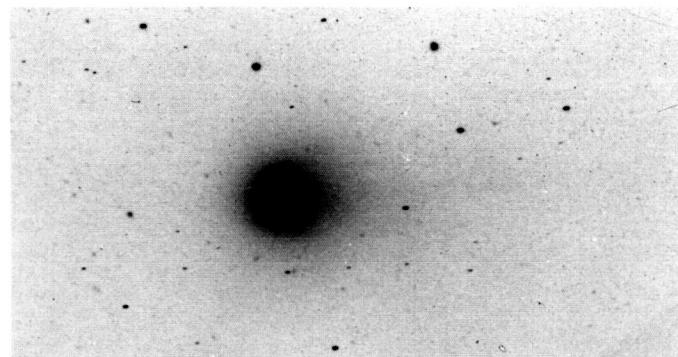


Figure 810. 1910 June 10.281; exposure 5 minutes; $r = 1.19$, $\Delta = 0.85$, $\theta = 78^\circ$, $\alpha = 56^\circ$, $S = 1.9 \text{ E}4$

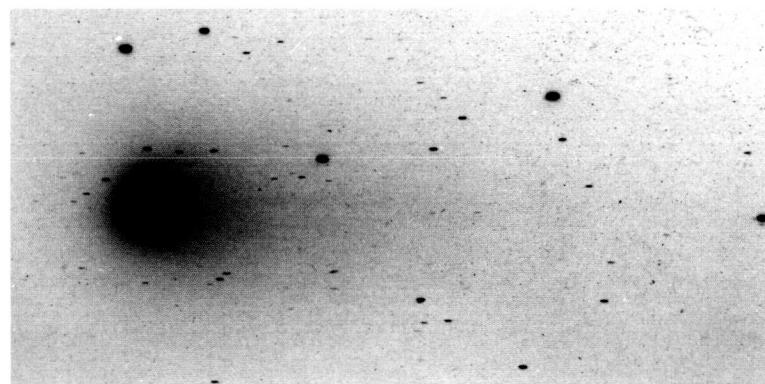


Figure 811. 1910 June 10.290; exposure 10 minutes; $r = 1.19$,
 $\Delta = 0.85$, $\theta = 78^\circ$, $\alpha = 56^\circ$, $S = 1.9 \text{ E}4$

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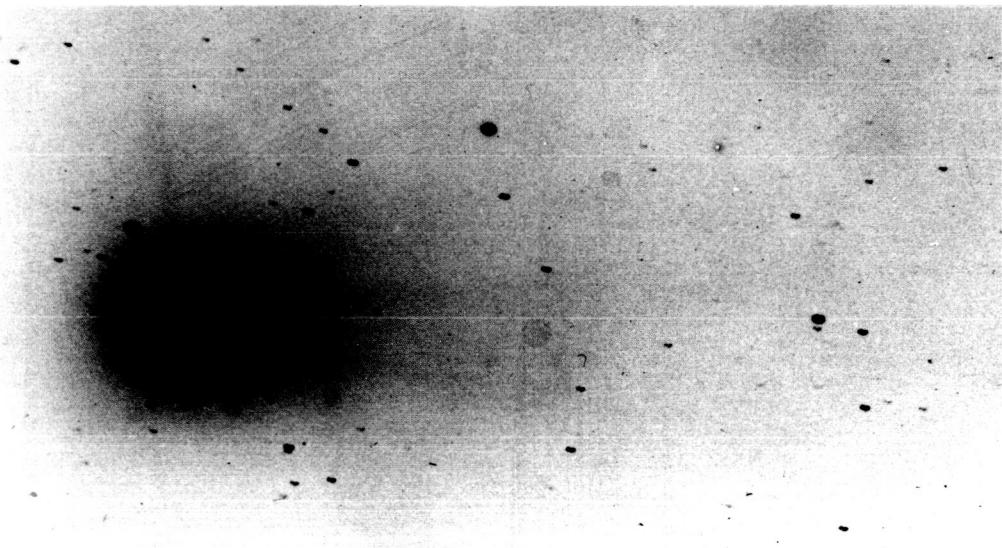


Figure 812. 1910 June 10.713; exposure 16 minutes; $r = 1.20$, $\Delta = 0.87$, $\theta = 78^\circ$, $\alpha = 56^\circ$, $S = 1.2 \text{ E}4$

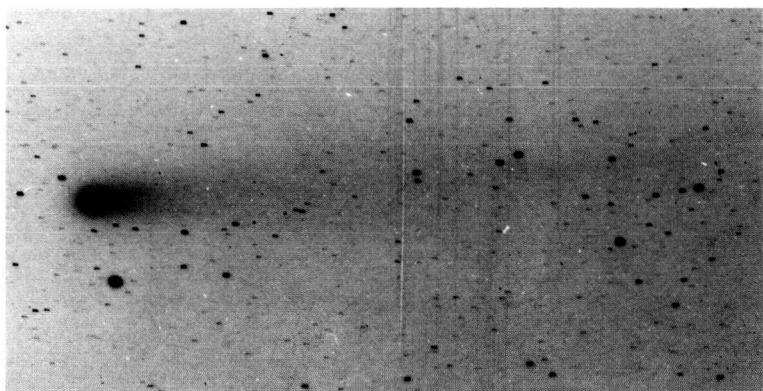


Figure 813. 1910 June 11.476; exposure 60 minutes; $r = 1.21$, $\Delta = 0.90$, $\theta = 78^\circ$, $\alpha = 55^\circ$, $S = 1.1 \text{ E}5$

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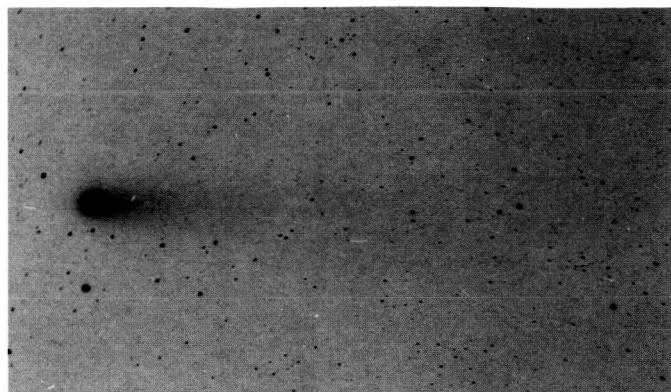


Figure 814. 1910 June 11.731; exposure 50 minutes; $r = 1.21$, $\Delta = 0.91$, $\theta = 78^\circ$, $\alpha = 54^\circ$, $S = 1.0 \text{ E}5$



Figure 815-1. 1910 June 11.269; exposure 10 minutes; $r = 1.20$, $\Delta = 0.89$, $\theta = 78^\circ$, $\alpha = 55^\circ$, $S = 1.9 \text{ E}4$

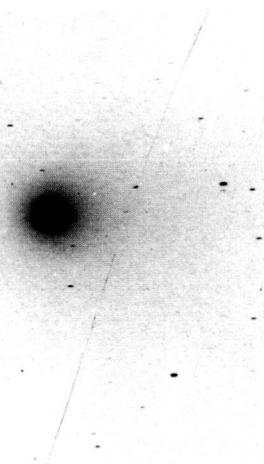


Figure 815-2. 1910 June 11.269; exposure 10 mintues; $r = 1.20$, $\Delta = 0.89$, $\theta = 78^\circ$, $\alpha = 55^\circ$, $S = 1.9 \text{ E}4$

PHOTOGRAPHS OF COMET HALLEY 1910 II

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Figure 816-1. 1910 June 11.285; exposure 25 minutes; $r = 1.21$, $\Delta = 0.89$, $\theta = 78^\circ$, $\alpha = 55^\circ$, $S = 1.9 \text{ E}4$

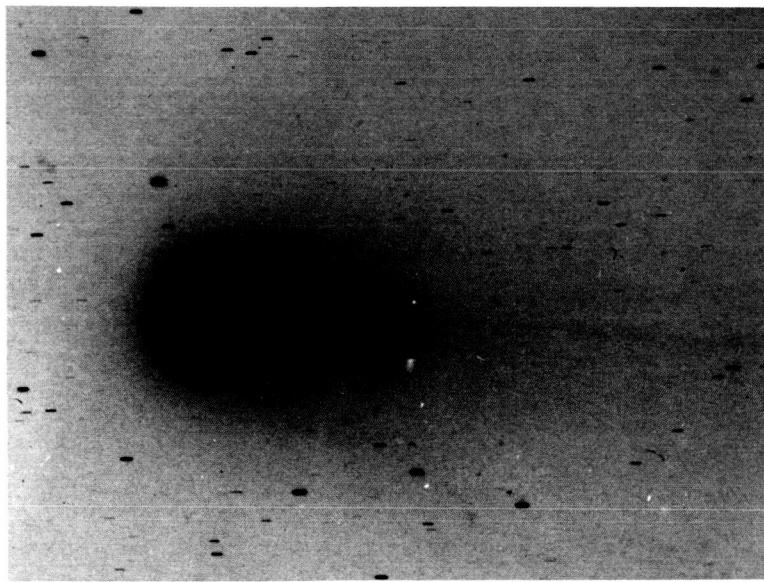


Figure 816-2. 1910 June 11.285; exposure 25 minutes; $r = 1.21$, $\Delta = 0.89$, $\theta = 78^\circ$, $\alpha = 55^\circ$, $S = 1.9 \text{ E}4$

ATLAS OF COMET HALLEY 1910 II



Figure 817-1. 1910 June 11.704; exposure 11 minutes; $r = 1.21$, $\Delta = 0.91$, $\theta = 78^\circ$, $\alpha = 54^\circ$, $S = 1.3 E4$

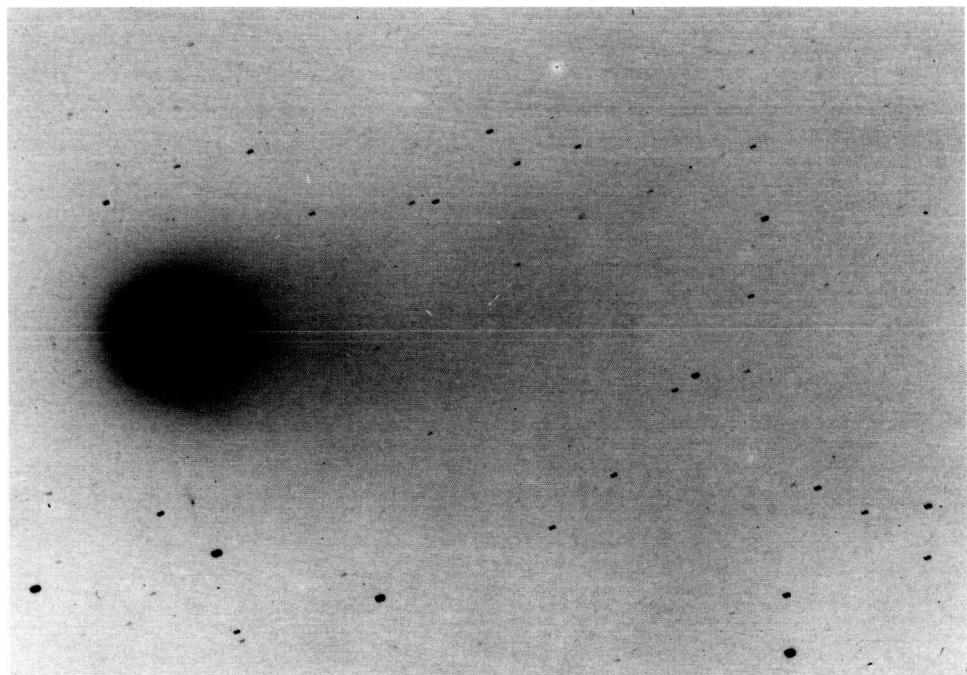


Figure 817-2. 1910 June 11.704; exposure 11 minutes; $r = 1.21$, $\Delta = 0.91$, $\theta = 78^\circ$, $\alpha = 54^\circ$, $S = 1.3 E4$

PHOTOGRAPHS OF COMET HALLEY 1910 II

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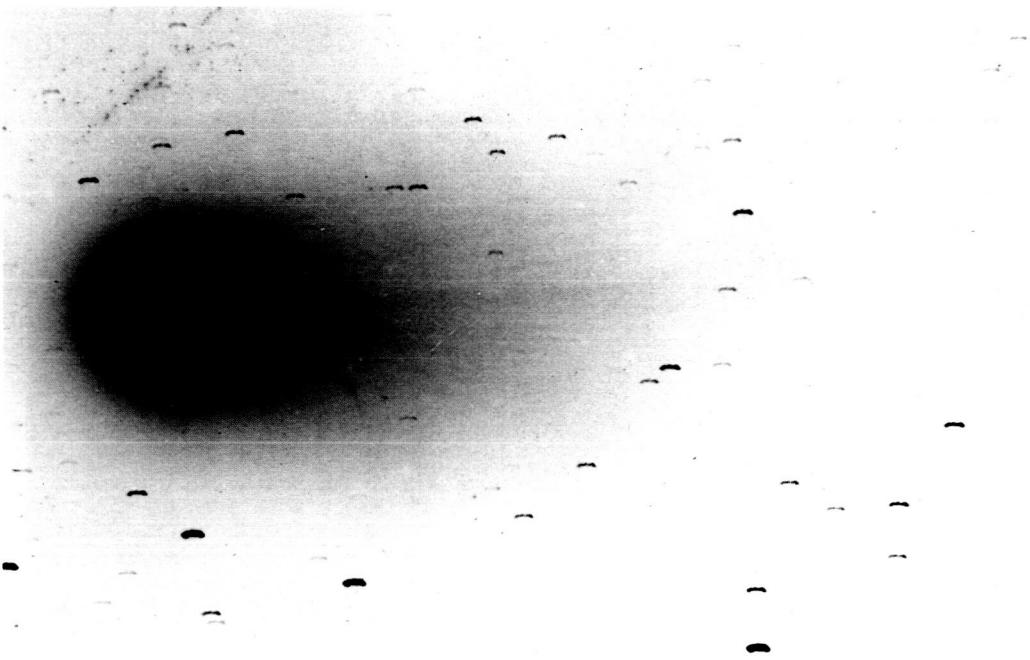


Figure 818. 1910 June 11.731; exposure 50 minutes; $r = 1.21$, $\Delta = 0.91$, $\theta = 78^\circ$, $\alpha = 54^\circ$,
 $S = 1.3 E4$

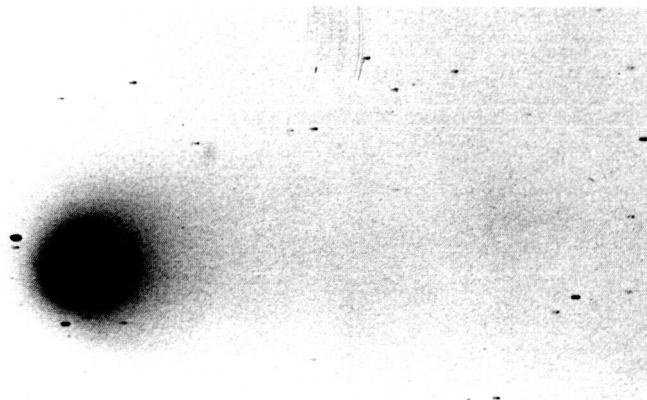


Figure 819. 1910 June 11.755; exposure 11 minutes; $r = 1.21$,
 $\Delta = 0.91$, $\theta = 78^\circ$, $\alpha = 54^\circ$, $S = 1.3 E4$

ATLAS OF COMET HALLEY 1910 II

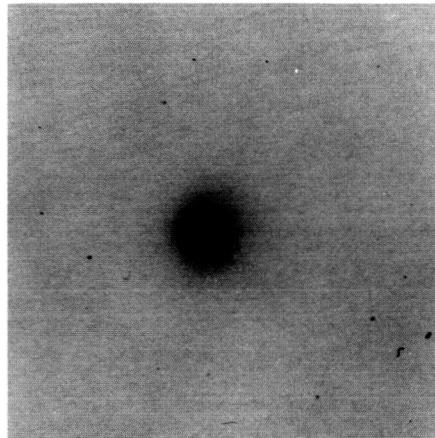


Figure 820a. 1910
June 12.492; exposure
10 minutes; $r = 1.22$,
 $\Delta = 0.94$, $\theta = 77^\circ$,
 $\alpha = 53^\circ$, $S = 2.0$ E4

Figure 820b. 1910
June 12.483; exposure
15 minutes; $r = 1.22$,
 $\Delta = 0.94$, $\theta = 77^\circ$,
 $\alpha = 53^\circ$, $S = 2.0$ E4

Figure 821. 1910 June 12.704; ex-
posure 2 minutes; $r = 1.23$, $\Delta = 0.94$,
 $\theta = 77^\circ$, $\alpha = 53^\circ$, $S = 1.3$ E4

Figure 822. 1910 June 12.709; exposure 10
minutes; $r = 1.23$, $\Delta = 0.94$, $\theta = 77^\circ$, $\alpha = 53^\circ$,
 $S = 1.3$ E4

PHOTOGRAPHS OF COMET HALLEY 1910 II

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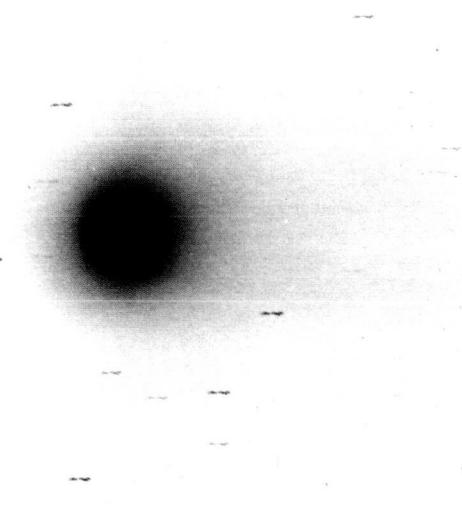


Figure 823-1. 1910 June 12.734; exposure 60 minutes; $r = 1.23$, $\Delta = 0.95$, $\theta = 77^\circ$, $\alpha = 53^\circ$, $S = 1.3 \text{ E}4$



Figure 823-2. 1910 June 12.374; exposure 60 minutes; $r = 1.23$, $\Delta = 0.95$, $\theta = 77^\circ$, $\alpha = 53^\circ$, $S = 1.3 \text{ E}4$

ATLAS OF COMET HALLEY 1910 II

Figure 824a. 1910
June 14.479; exposure
10 minutes; $r = 1.25$,
 $\Delta = 1.01$, $\theta = 76^\circ$,
 $\alpha = 51^\circ$, $S = 2.2 \text{ E}4$

Figure 824b. 1910
June 14.490; exposure
15 minutes; $r = 1.25$,
 $\Delta = 1.01$, $\theta = 76^\circ$,
 $\alpha = 51^\circ$, $S = 2.2 \text{ E}4$

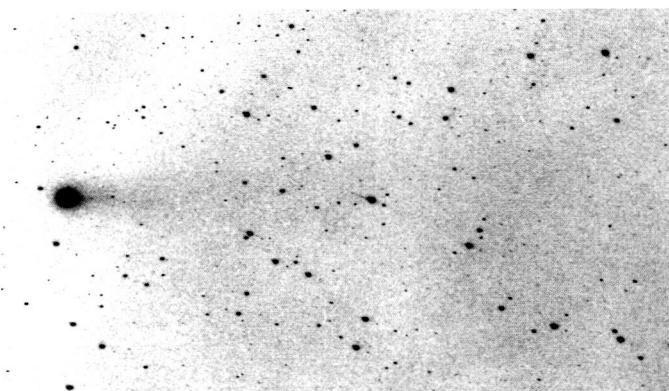


Figure 825. 1910 June 24.699; exposure 42 minutes; $r = 1.41$, $\Delta = 1.38$, $\theta = 70^\circ$, $\alpha = 42^\circ$, $S = 1.2 \text{ E}5$

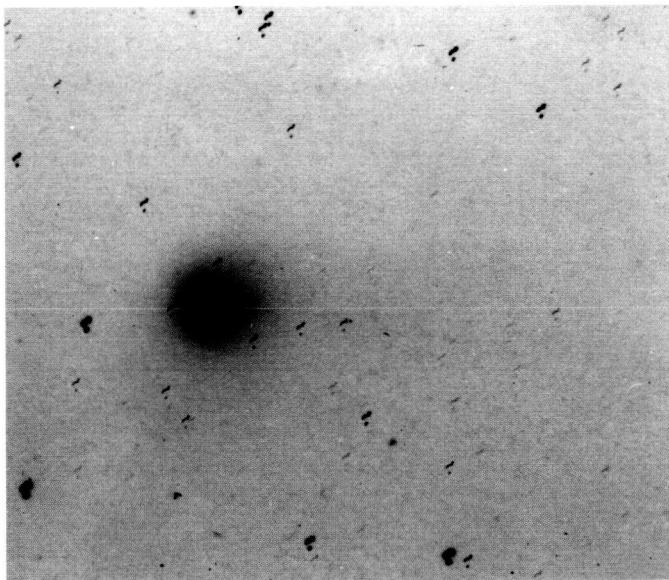


Figure 826. 1910 June 25.284; exposure 60 minutes; $r = 1.42$, $\Delta = 1.40$, $\theta = 69^\circ$, $\alpha = 42^\circ$, $S = 3.1 \text{ E}4$

PHOTOGRAPHS OF COMET HALLEY 1910 II

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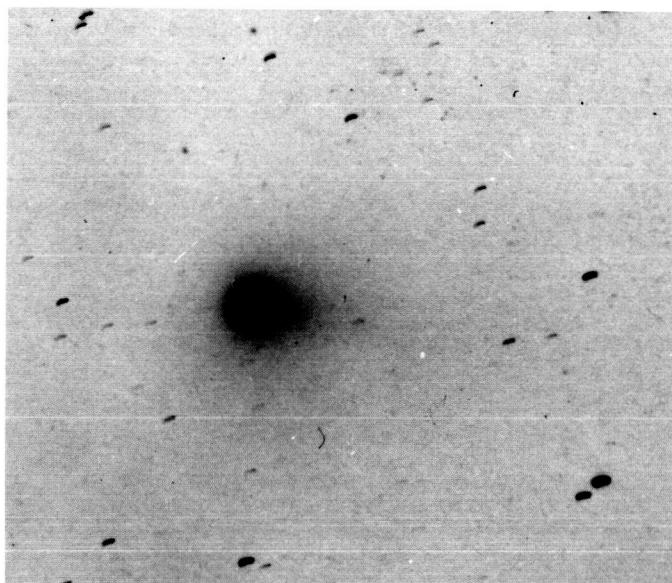


Figure 827. 1910 June 26.282; exposure 60 minutes; $r = 1.44$, $\Delta = 1.44$, $\theta = 69^\circ$, $\alpha = 41^\circ$, $S = 3.1 \text{ E}4$

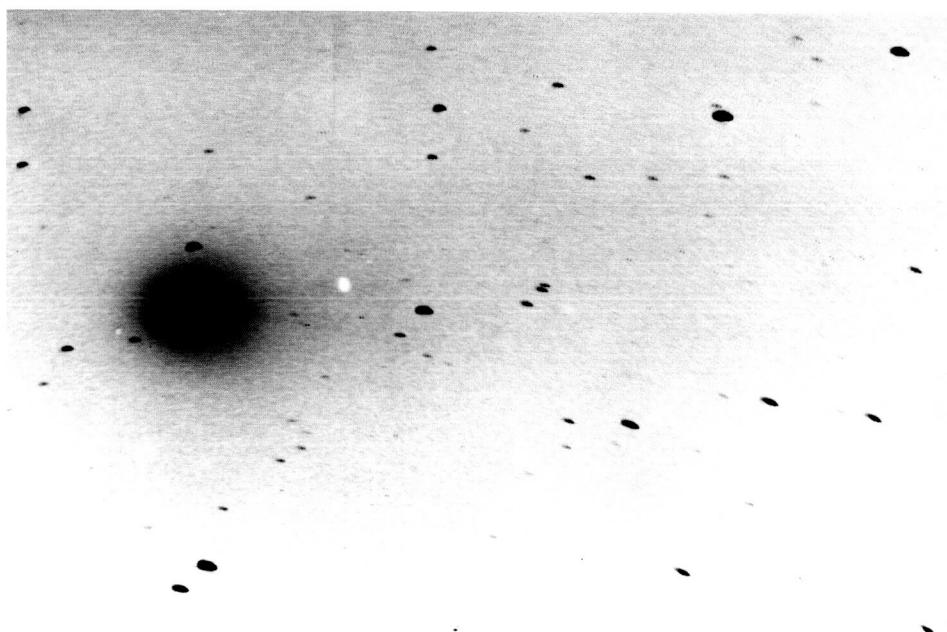


Figure 828. 1910 June 27.738; exposure 50 minutes; $r = 1.46$, $\Delta = 1.49$, $\theta = 68^\circ$, $\alpha = 40^\circ$, $S = 2.1 \text{ E}4$

ATLAS OF COMET HALLEY 1910 II

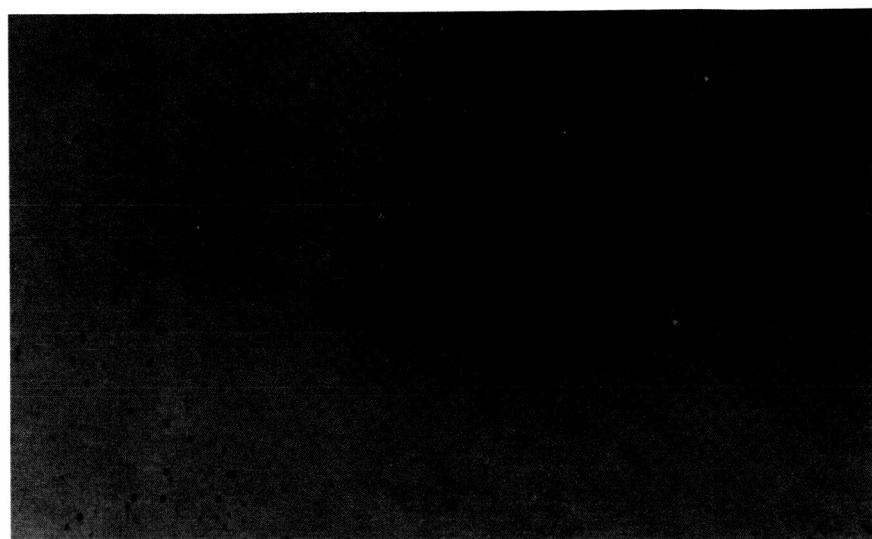


Figure 829. 1910 June 28.729; exposure 60 minutes; $r = 1.47$, $\Delta = 1.52$,
 $\theta = 67^\circ$, $\alpha = 39^\circ$, $S = 1.7 \text{ E}5$

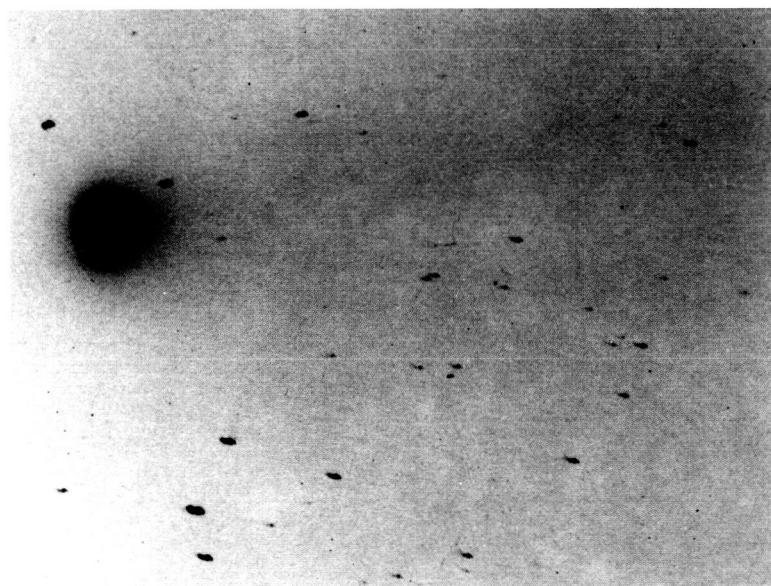


Figure 830. 1910 July 1.727; exposure 50 minutes; $r = 1.52$, $\Delta = 1.63$, $\theta = 65^\circ$, $\alpha = 37^\circ$, $S = 2.3 \text{ E}4$

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PHOTOGRAPHS OF COMET HALLEY 1910 II

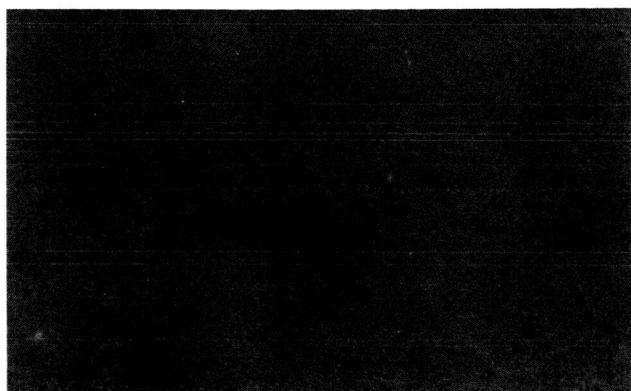


Figure 831. 1910 July 1.727; exposure 50 minutes; $r = 1.52$, $\Delta = 1.63$, $\theta = 65^\circ$, $\alpha = 37^\circ$, $S = 1.9$ E5

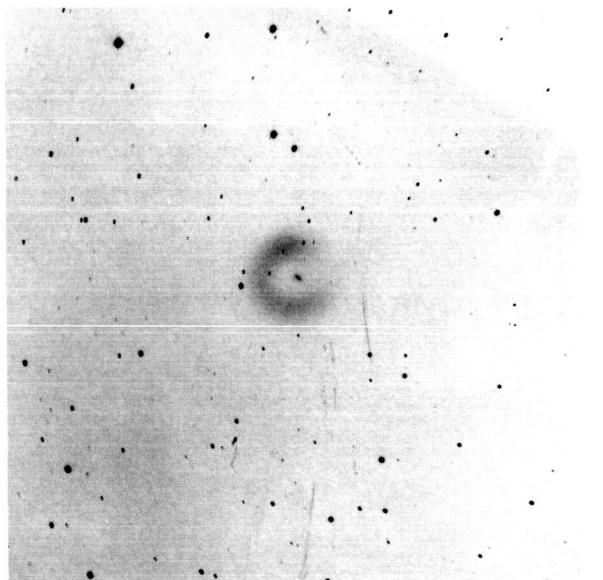


Figure 832. 1910 December 13.027; exposure 86 minutes; $r = 3.61$, $\Delta = 3.76$, $\theta = 73^\circ$, $\alpha = 15^\circ$, $S = 5.3$ E4

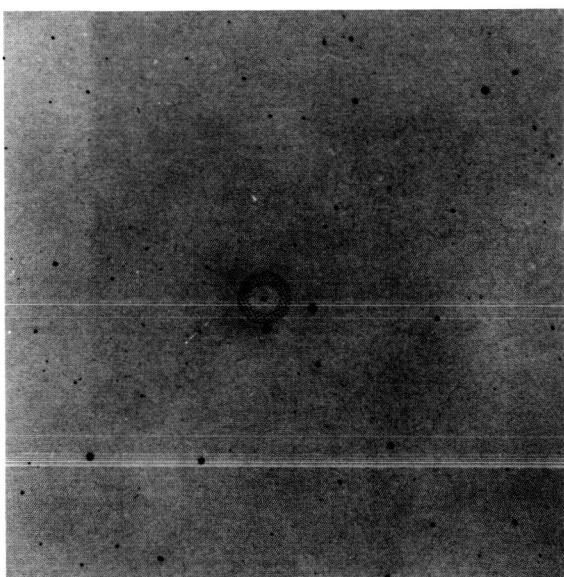


Figure 833. 1910 December 30.024; exposure 26 minutes; $r = 3.79$, $\Delta = 3.64$, $\theta = 91^\circ$, $\alpha = 15^\circ$, $S = 5.1$ E4

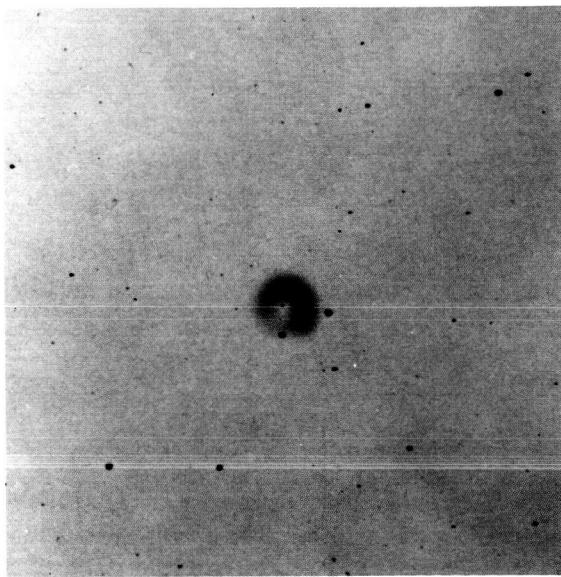


Figure 834. 1910 December 30.044; exposure 26 minutes; $r = 3.79$, $\Delta = 3.64$, $\theta = 91^\circ$, $\alpha = 15^\circ$, $S = 5.1$ E4

ATLAS OF COMET HALLEY 1910 II

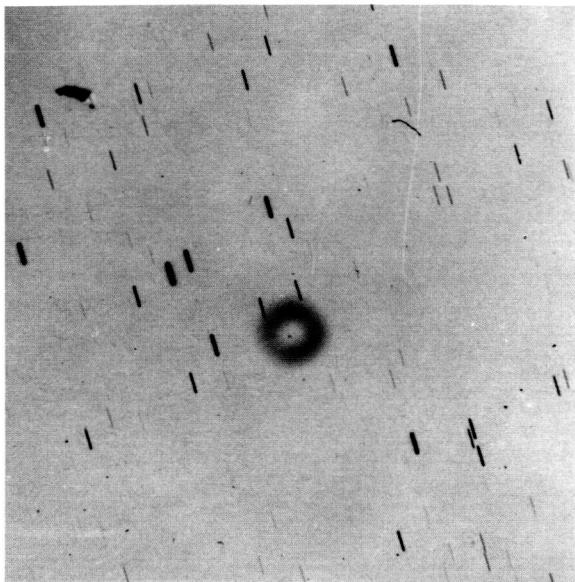


Figure 835. 1911 February 22.875; exposure 60 minutes; $r = 4.36$, $\Delta = 3.46$, $\theta = 152^\circ$, $\alpha = 6^\circ$, $S = 4.9$ E4

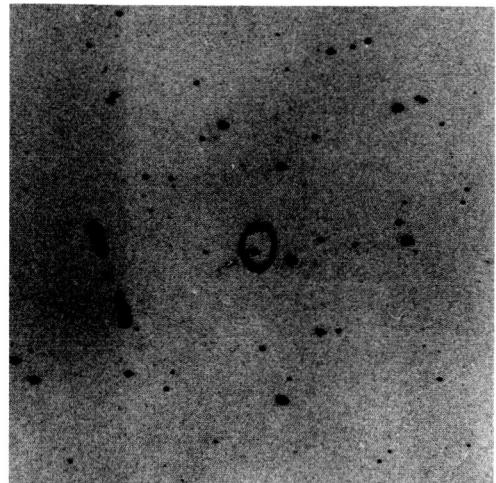


Figure 836. 1911 March 29.679; exposure 9 minutes; $r = 4.71$, $\Delta = 3.86$, $\theta = 144^\circ$, $\alpha = 7^\circ$, $S = 5.2$ E4

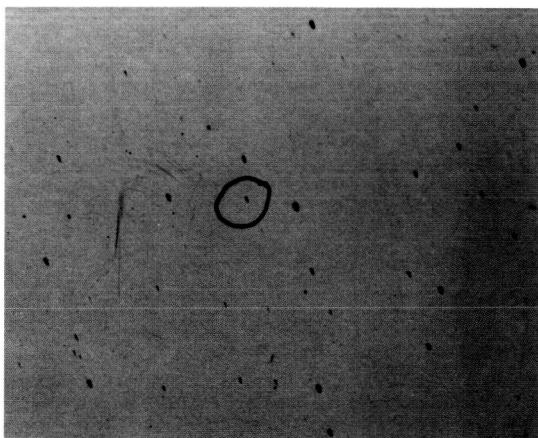


Figure 837. 1911 May 27.722; exposure 90 minutes; $r = 5.26$, $\Delta = 5.25$, $\theta = 85^\circ$, $\alpha = 11^\circ$, $S = 7.4$ E4

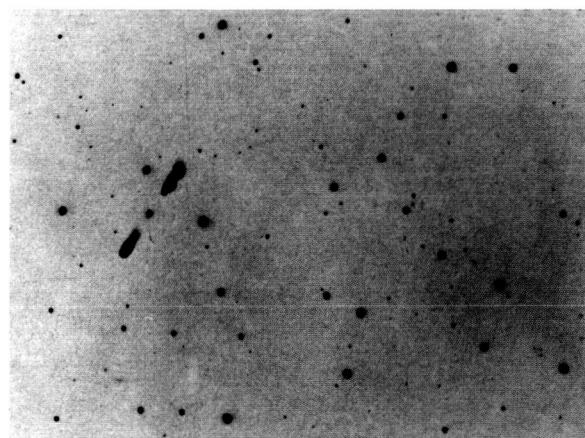


Figure 838. 1911 May 30.696; exposure 81 minutes; $r = 5.29$, $\Delta = 5.32$, $\theta = 82^\circ$, $\alpha = 11^\circ$, $S = 7.1$ E4

4

**COMPARISON OF VISUAL AND PHOTOGRAPHIC
OBSERVATIONS OF COMET HALLEY 1910 II**

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COMET HALLEY 1910 II

Figures 1, 2a, 2b, and 2c are photographs of Comet Halley 1910 II taken by H. Knox Shaw with a 30-inch reflector at Khedivial Observatory, Helwan, Egypt.

Figure 1. 1910 May 14.574; exposure 6 minutes; $r = 0.79$, $\Delta = 0.27$, $\alpha = 138^\circ 3'$; enlarged 1.5X; scale: 7.7 E3 km/mm.

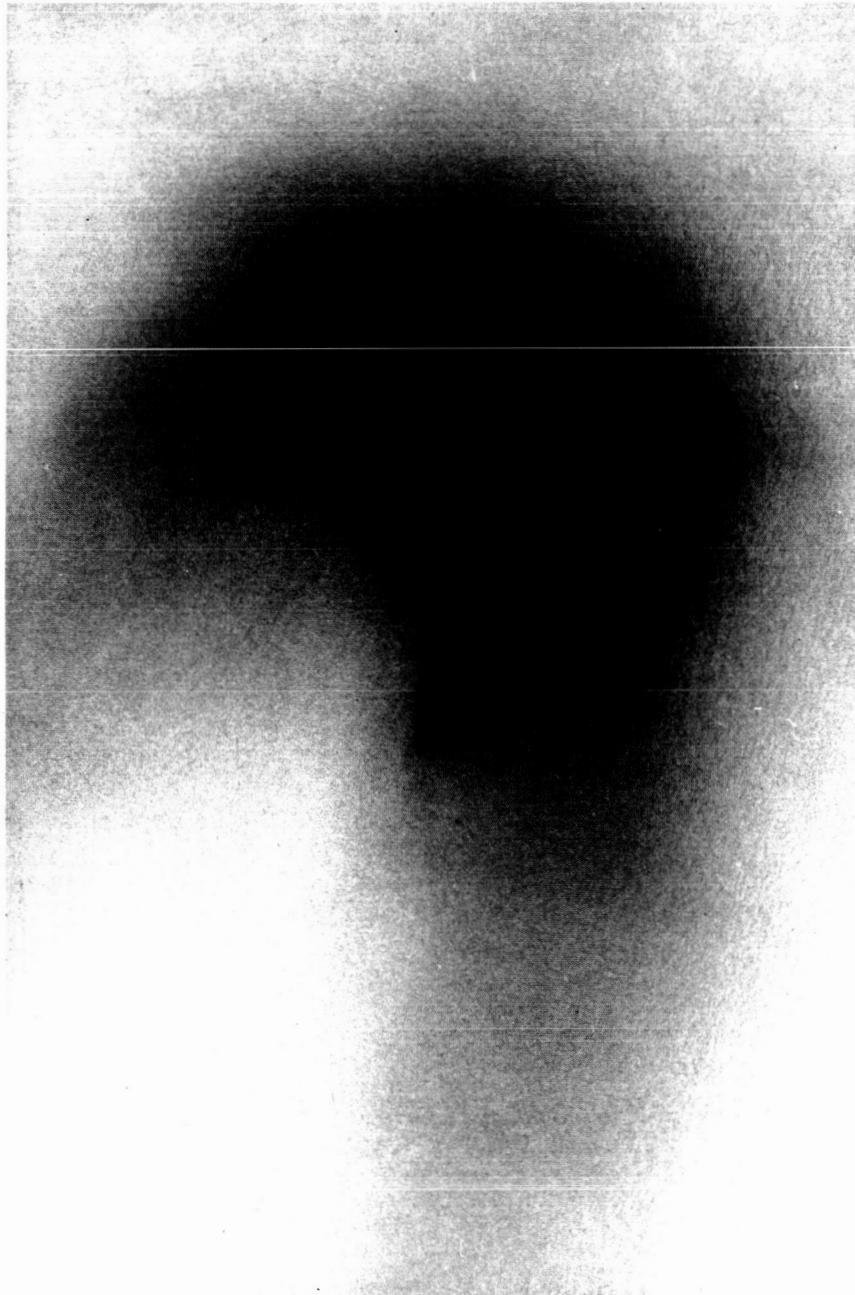


Figure 2a. 1910 May 14.579; exposure 1 minute; $r = 0.79$, $\Delta = 0.27$, $\alpha = 138^\circ 3'$; enlarged 1.5X; scale: 7.7 E3 km/mm.

Figure 2b. Detail of Figure 2a; enlarged 6.3X; scale: 1.9 E3 km/mm.

Figure 2c. Drawing based on photograph taken at Khedivial Observatory on May 15.079; enlarged about 3X. See Figure 2a. This image is rotated by approximately 30° counterclockwise as compared to Figures 2a and 2b.

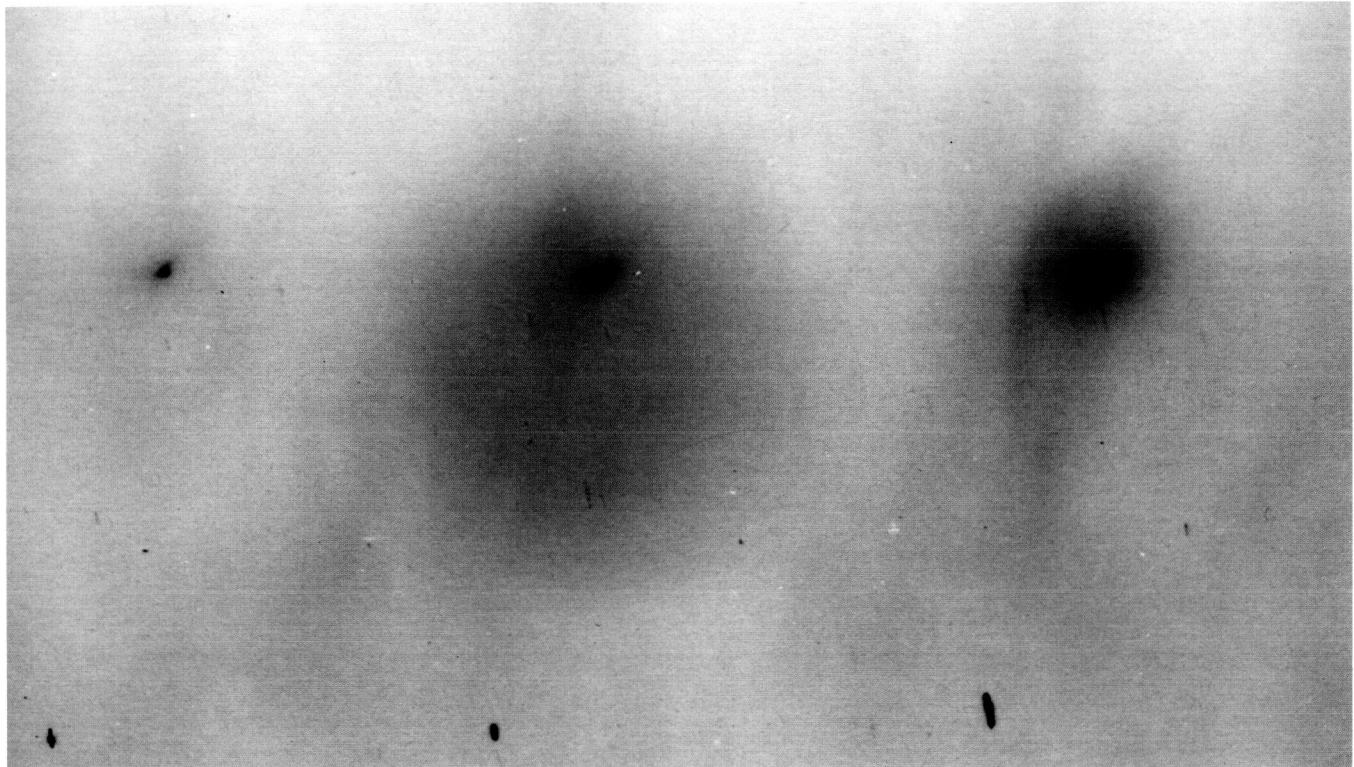


Figure 3a. 1910 May 21.653; exposures (left to right) 30, 60, and 120 seconds; $r = 0.89$, $\Delta = 0.17$, $\alpha = 132^\circ 2$; enlarged 2X; scale: 1.8 E3 km/mm.

Figures 3a and 4a are photographs of Comet Halley 1910 II taken by C.O. Lampland with a 42-inch reflector at Lowell Observatory in Flagstaff, Arizona, U.S.A.

Figures 3b and 4b are drawings of Comet Halley 1910 II made by A. Ricco on May 21 (Memorie della Società degli Sperimentatori Italiani, Vol. 1, Ser. 2^a, p. 97, 1912).



Figure 3b. Drawing made after visual observation through a telescope. Note the similarity in the appearance of the structures near the nucleus in the drawing (Figure 3b) and in the short-exposed photographs (Figure 3a).

COMPARISON OF VISUAL AND PHOTOGRAPHIC OBSERVATIONS OF COMET HALLEY 1910 II

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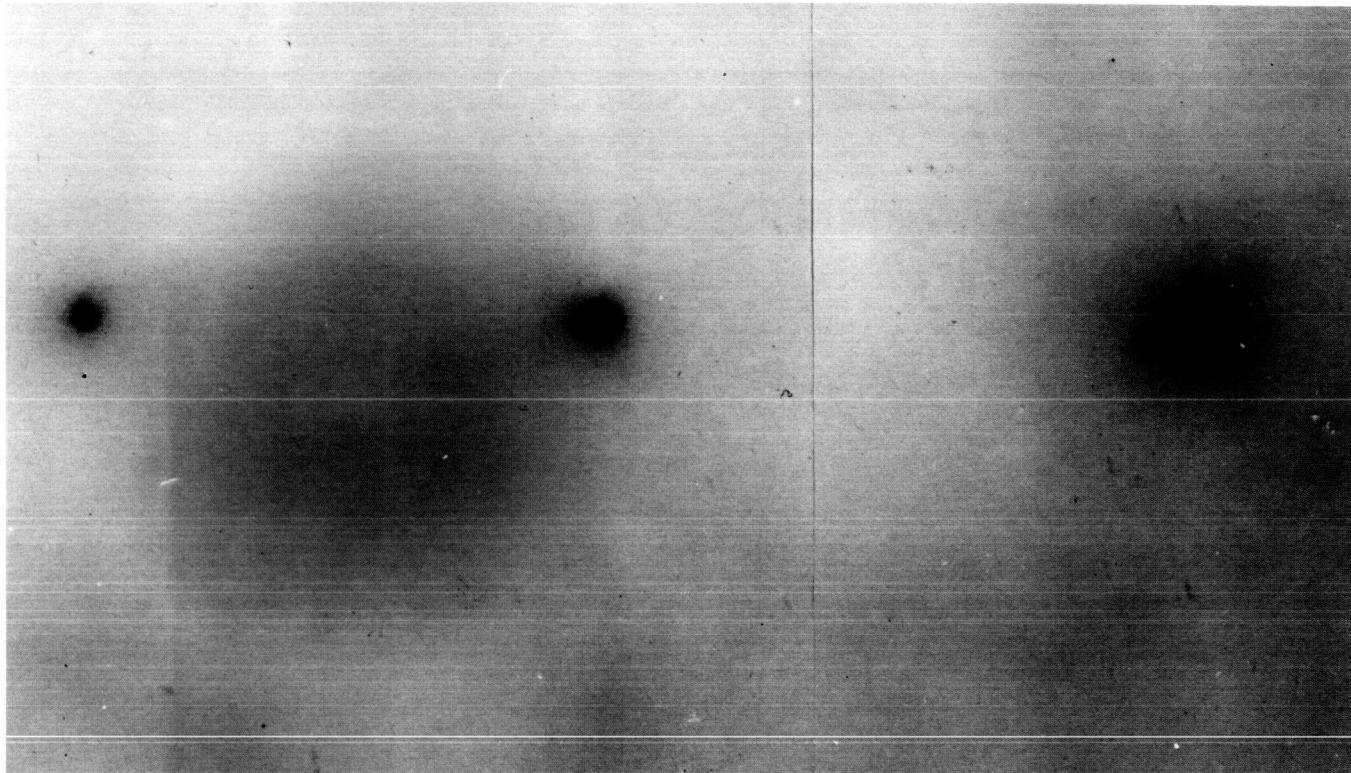


Figure 4a. 1910 May 22.674; exposures (left to right) 40, 80, and 120 seconds; $r = 0.91$, $\Delta = 0.19$, $\alpha = 119^\circ 1$; enlarged 2X; scale: 2.1 E4 km/mm.

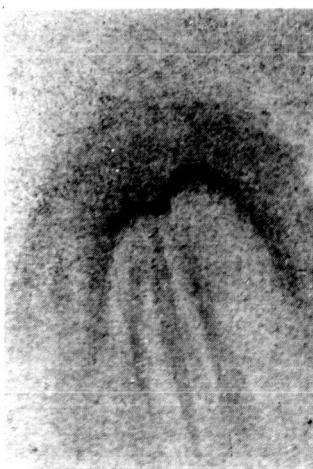


Figure 4b. Drawing made after visual observation through a telescope. Note the similarity in the appearance of the structures near the nucleus in the drawing (Figure 4b) and in the short-exposed photographs (Figure 4a).

ATLAS OF COMET HALLEY 1910 II

Figure 5 is a photograph of Comet Halley 1910 II taken by H. Knox Shaw with a 30-inch reflector at Khedivial Observatory, Helwan, Egypt.

Figure 6 is a drawing of Comet Halley 1910 II made by A. Ricco on May 25 (*Memorie della Societa degli Spettroscopisti Italiani, Ser. 2^a, Vol. 1, p. 97, 1912*).

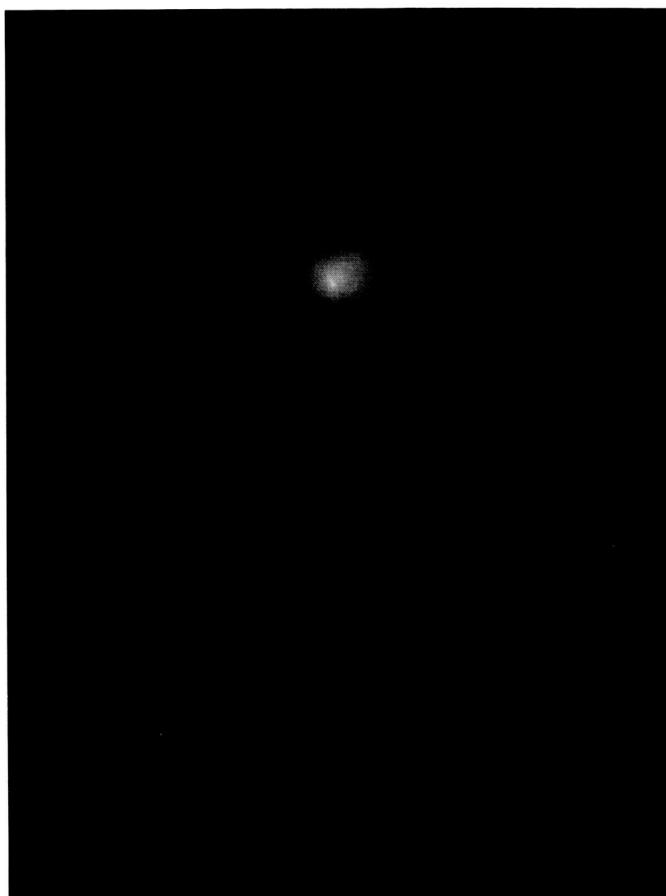


Figure 5. 1910 May 25.255; exposure 5 minutes; $r = 0.95$, $\Delta = 0.26$; scale: 4.1×10^3 km/mm. A positive and negative print of the original photograph was superimposed to bring out faint details that were seen in the original negative, but lost in a normal print.

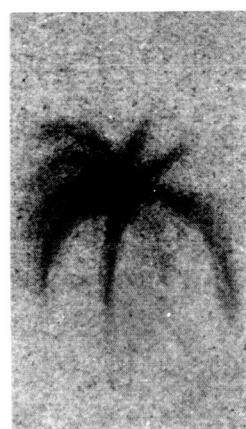


Figure 6. Drawing made after visual observation through a telescope. Note the similarity in the appearance of the structures near the nucleus in the photograph (Figure 7a) and in the drawing (Figure 7b).

COMPARISON OF VISUAL AND PHOTOGRAPHIC OBSERVATIONS OF COMET HALLEY 1910 II

Figures 7a, 7b, and 8a are photographs of Comet Halley 1910 II taken by H. Knox Shaw with a 30-inch reflector at Khedivial Observatory, Helwan, Egypt.

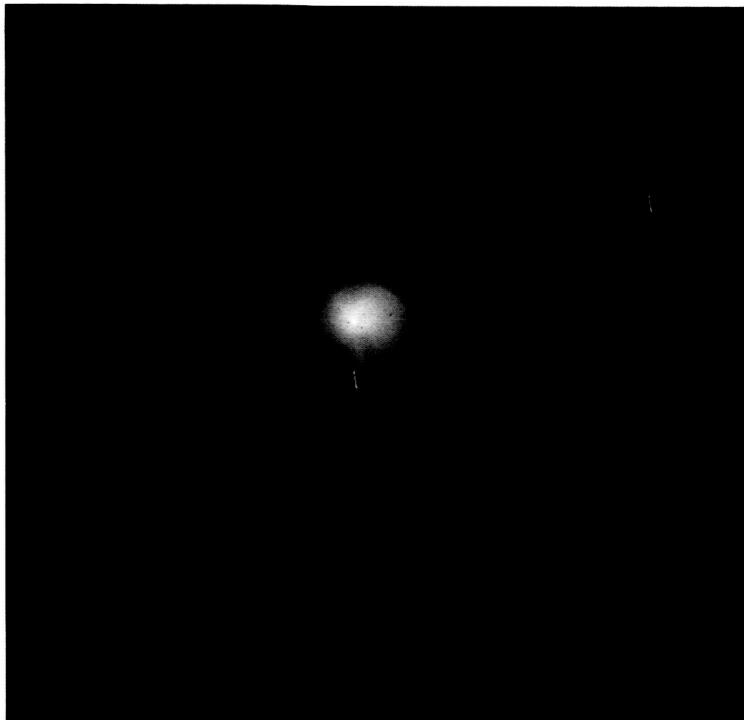


Figure 7a. 1910 May 25.269; exposure 5 minutes; $r = 0.95$; $\Delta = 0.26$, $\alpha = 97^\circ 0$; enlarged 2.7X; scale: 4.1 E3 km/mm.

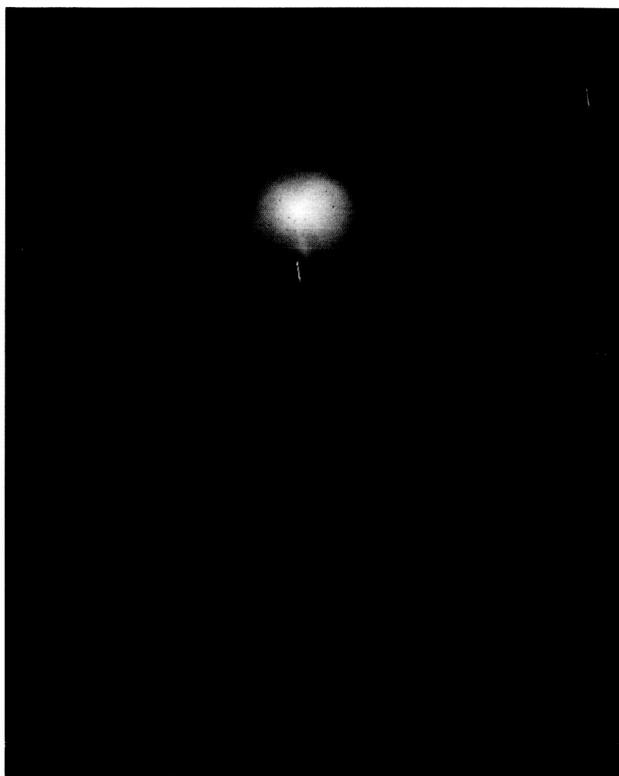


Figure 7b. Detail of Figure 7a; enlarged 2.7X; scale: 4.1 E3 km/mm. A positive and negative print of the original photograph was superimposed to bring out faint details that were seen in the original negative, but lost in a normal print.



Figure 7c. Drawing made by examination of the negative of Figure 7a through a low-power microscope.

ATLAS OF COMET HALLEY 1910 II

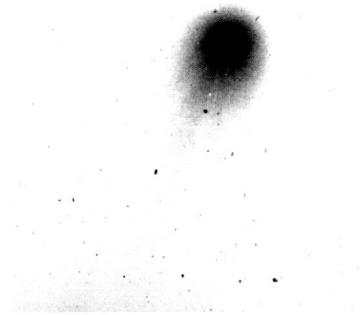


Figure 8a. 1910 June 5.326; exposure 10 minutes; $r = 1.12$, $\Delta = 0.67$, $\alpha = 63^\circ 5'$; enlarged 1.5X; scale: 1.9 E4 km/mm.



Figure 8b. Drawing based on photograph taken at Khedivial Observatory, Helwan, Egypt on June 5.826; enlarged about 10X. See Figure 8a.

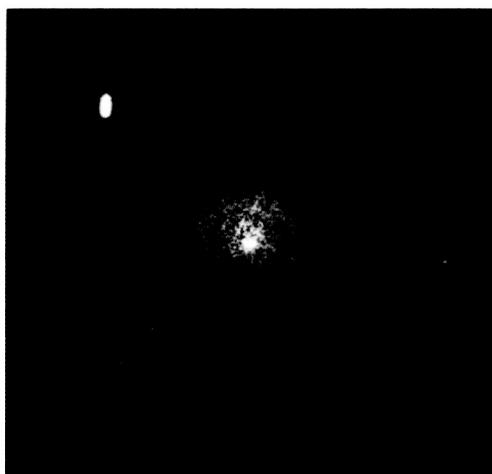
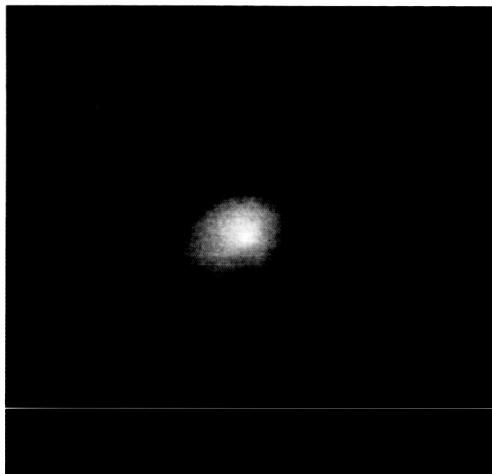
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COMET HALLEY 1910 II

Figures 1 through 7 are high-resolution images of Comet Halley 1910 II taken at Mount Wilson Observatory in Pasadena, California, U.S.A. (S. M. Larson and Z. Sekanina, Astronomical Journal, 89, p. 571, 1984). The top image is an unprocessed print from the original plate. The middle and bottom images are digitally processed prints that were reproduced at two different display contrasts.



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Figure 1. 1910 May 4.990; exposure 8 minutes; scale: 2730 km/mm

ATLAS OF COMET HALLEY 1910 II

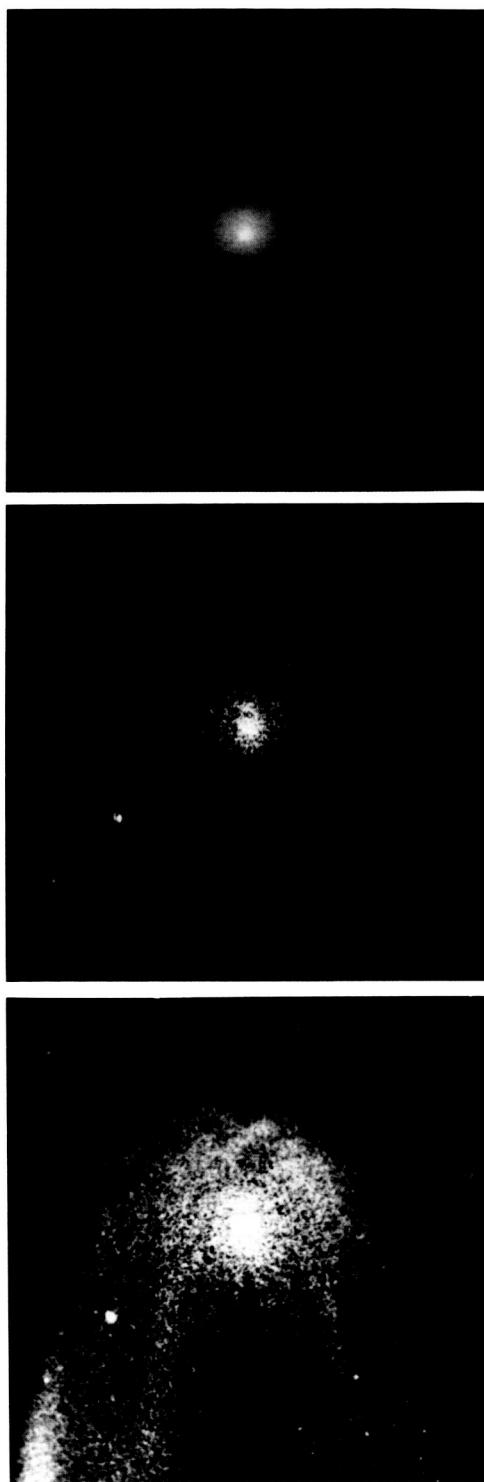


Figure 2. 1910 May 5.983; exposure 4 minutes; scale: 2730 km/mm

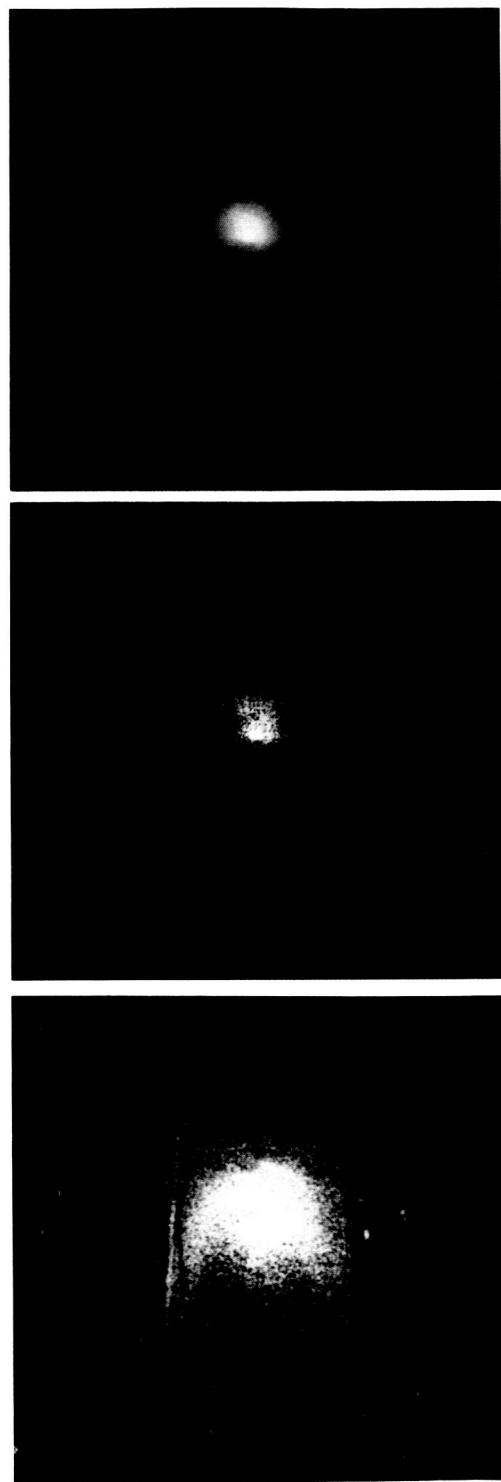


Figure 3. 1910 May 6.993; exposure 4 minutes; scale: 2730 km/mm

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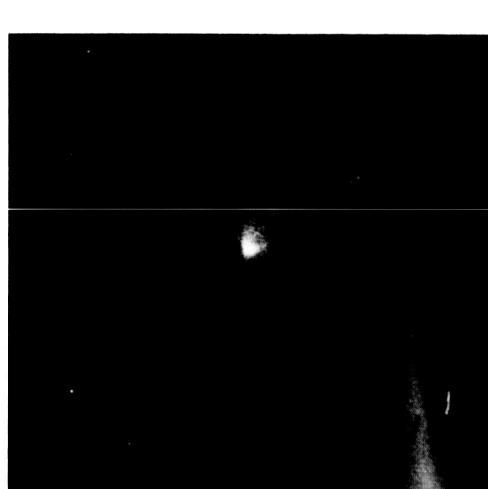
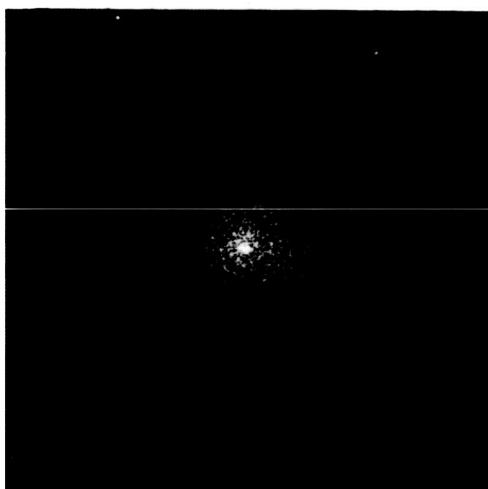
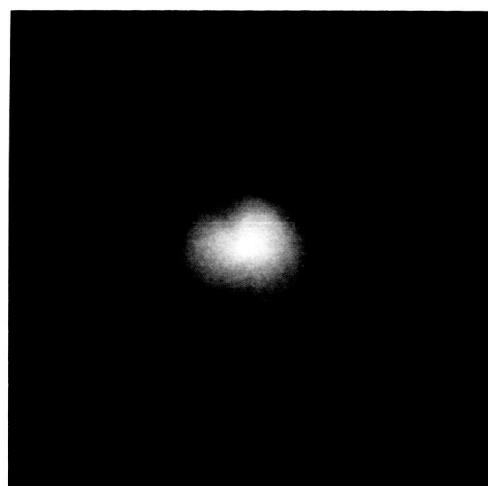
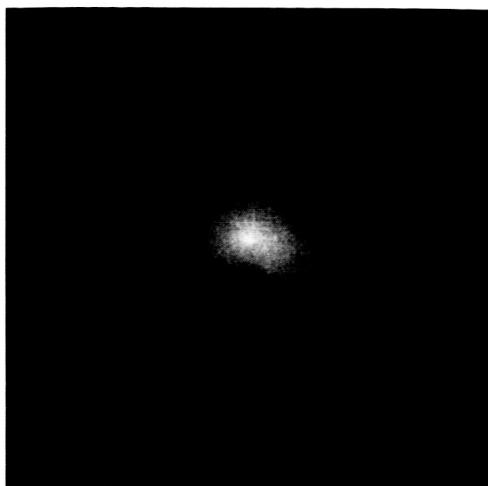


Figure 4. 1910 May 7.989; exposure 8 minutes; scale: 2730 km/mm



Figure 5. 1910 May 8.987; exposure 8 minutes; scale: 2730 km/mm

ATLAS OF COMET HALLEY 1910 II

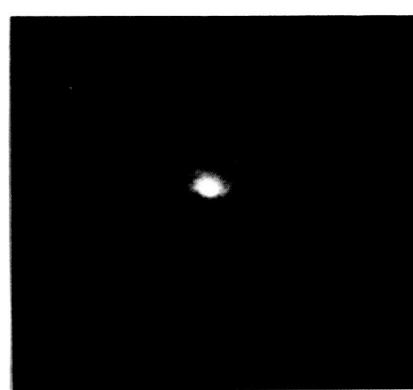
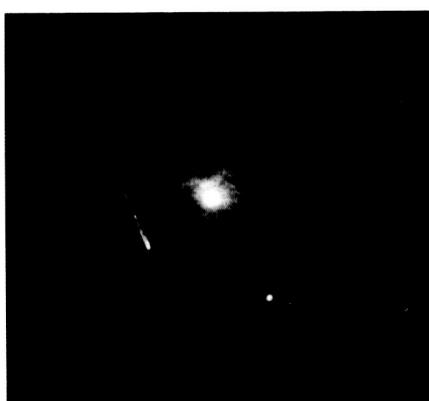
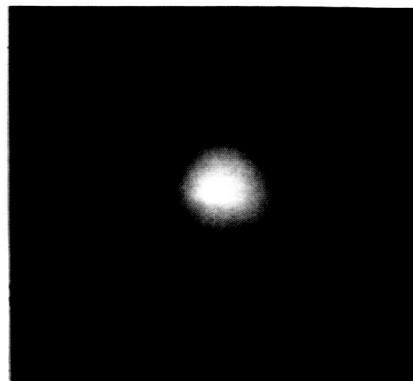


Figure 6. 1910 May 9.994; exposure 2 minutes; scale: 2730 km/mm

Figure 7. 1910 May 10.991; exposure 2 minutes; scale: 2730 km/mm

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*Figures 8 through 30 are additional high-resolution images of Comet Halley 1910 II taken at various observatories (S. M. Larson and Z. Sekanina, *Astronomical Journal*, 90, p. 822, 1985). The observatories are listed in the caption of their respective image.*

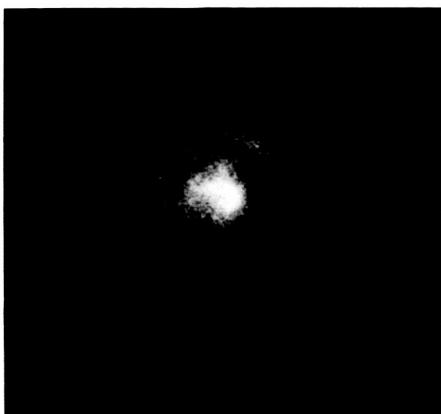


Figure 8. 1910 May 11.976; exposure 39 minutes; Lick Observatory, Mount Hamilton, California, U.S.A., scale: 3380 km/mm



Figure 9. 1910 May 12.982; exposure 13 minutes; Lick Observatory, Mount Hamilton, California, U.S.A., scale: 3380 km/mm

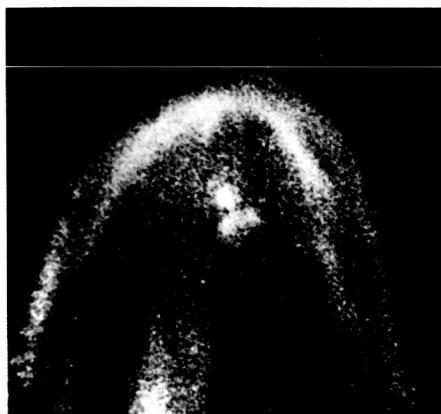


Figure 10. 1910 May 13.978; exposure 35 minutes; Lick Observatory, Mount Hamilton, California, U.S.A., scale: 3380 km/mm



Figure 11. 1910 May 14.574; exposure 6 minutes; Khedivial Observatory, Helwan, Egypt; scale: 3380 km/mm

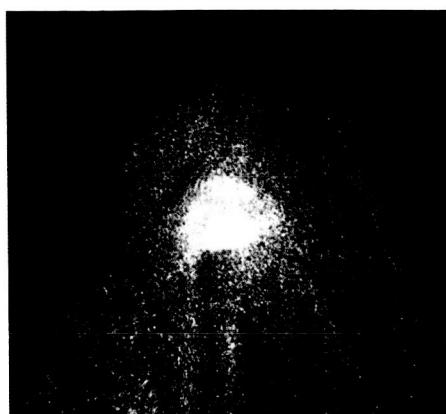


Figure 12. 1910 May 14.574; exposure 25 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm

ATLAS OF COMET HALLEY 1910 II



Figure 13. 1910 May 21.241; exposure 1 minute; Khedivial Observatory, Helwan, Egypt; scale: 3380 km/mm



Figure 14. Composite. 1910 May 21.656; refer to Tables 3 and 6 for exposure times; Lowell Observatory, Flagstaff, Arizona, U.S.A.; scale: 3380 km/mm

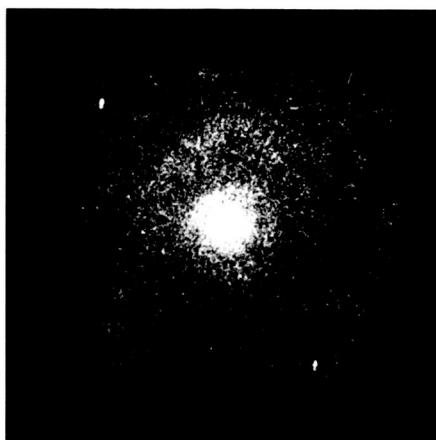


Figure 15. 1910 May 22.247; exposure 1 minute; Khedivial Observatory, Helwan, Egypt; scale: 3380 km/mm

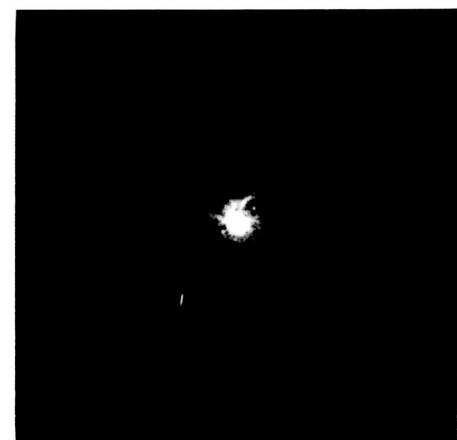


Figure 16. 1910 May 22.733; exposure 20 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm

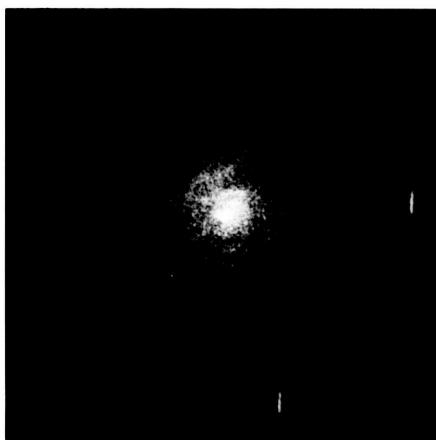


Figure 17. 1910 May 23.276; exposure 3 minutes; Khedivial Observatory, Helwan, Egypt; scale: 3380 km/mm



Figure 18. 1910 May 23.694; exposure 18 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm

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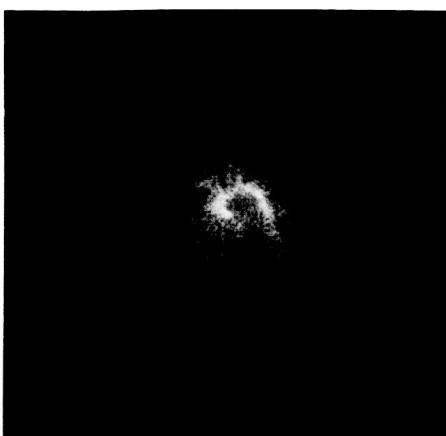


Figure 19. 1910 May 24.357; exposure not available; Kaiserliche Königliche Sternwarte Wien (Institute of Astronomy, University of Vienna)

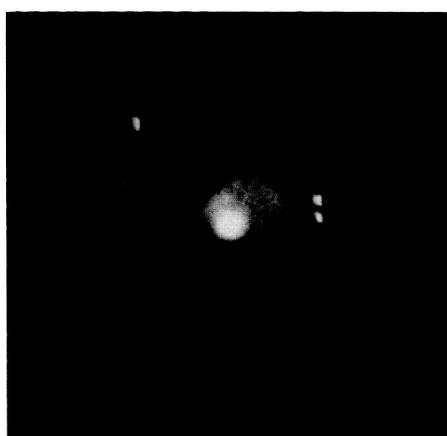


Figure 20. Composite. 1910 May 24.662; refer to Tables 3 and 6 for exposure times; Lowell Observatory, Flagstaff, Arizona, U.S.A.; scale: 3380 km/mm

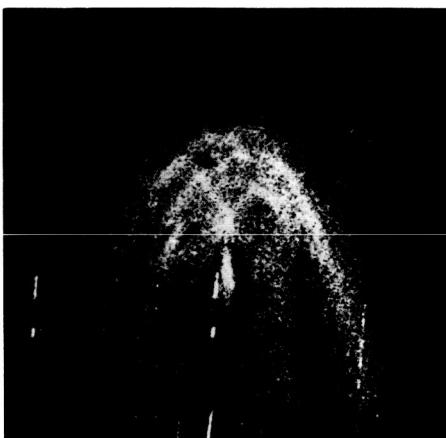


Figure 21. Composite. 1910 May 25.257; refer to Tables 3 and 6 for exposure times; Khedivial Observatory, Helwan, Egypt; scale: 3380 km/mm

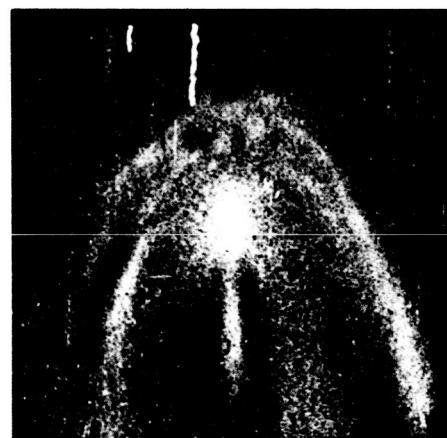


Figure 22. 1910 May 25.705; exposure 30 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm



Figure 23. Composite. 1910 May 26.268; refer to Tables 3 and 6 for exposure times; Khedivial Observatory, Helwan, Egypt; scale: 3380 km/mm

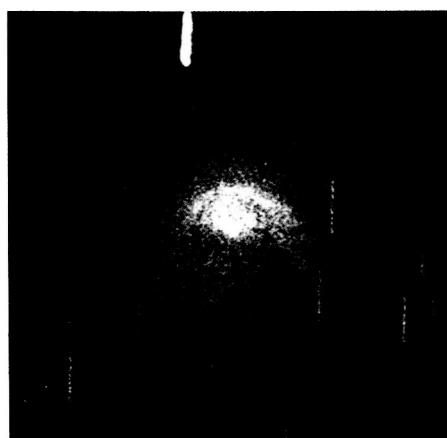


Figure 24. 1910 May 26.691; exposure 10 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm

ATLAS OF COMET HALLEY 1910 II



Figure 25. 1910 May 27.312; exposure 2 minutes; Khedivial Observatory, Helwan, Egypt; scale: 3380 km/mm



Figure 26. 1910 May 27.739; exposure 100 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm



Figure 27. 1910 May 28.739; exposure 90 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm



Figure 28. 1910 May 29.733; exposure 80 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm

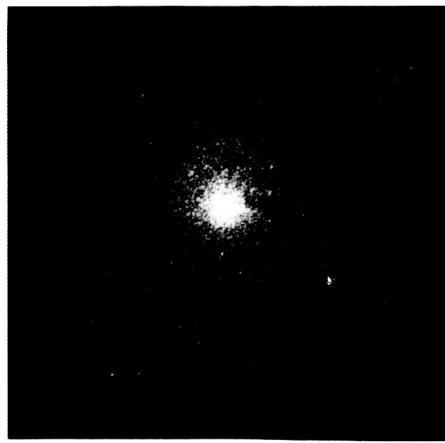


Figure 29. 1910 May 30.776; exposure 46 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm

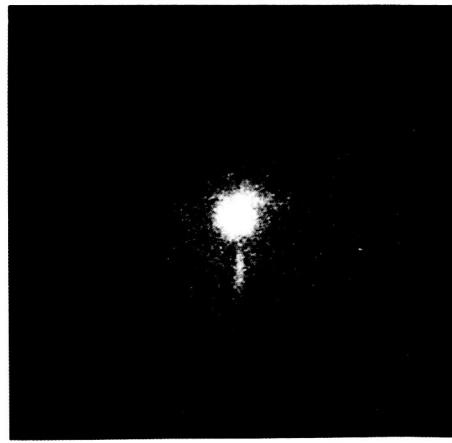


Figure 30. 1910 May 31.692; exposure 2 minutes; Lick Observatory, Mount Hamilton, California, U.S.A.; scale: 3380 km/mm

Figures 31 through 35 are high-resolution images of Comet Halley 1910 II taken at Mount Wilson Observatory in Pasadena, California, U.S.A. (S. M. Larson and Z. Sekanina, Astronomical Journal, 89, p. 571, 1984). The top image is an unprocessed print from the original plate. The middle and bottom images are digitally processed prints that were reproduced at two different display contrasts.

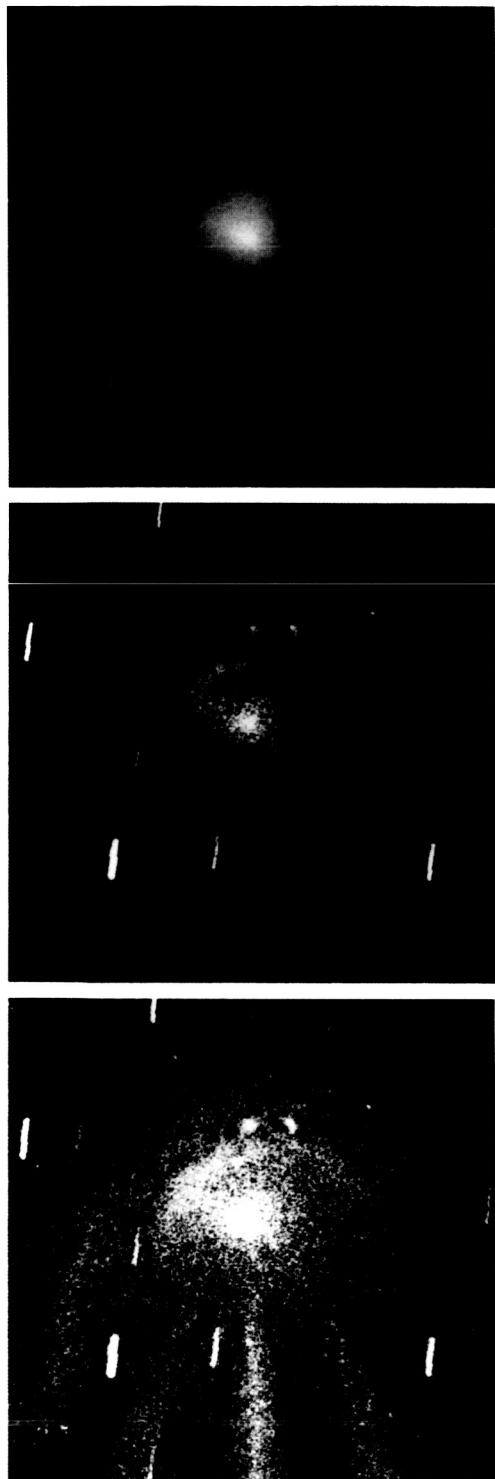


Figure 31. 1910 June 1.682; exposure 12 minutes; scale: 2730 km/mm

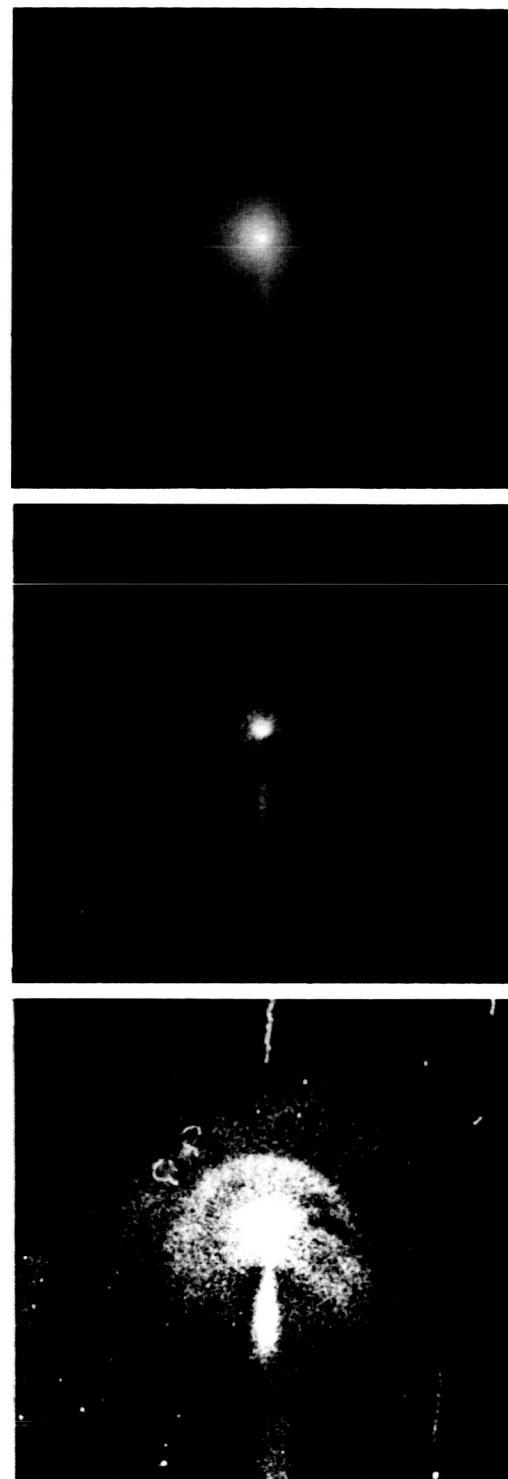


Figure 32. 1910 June 2.729; exposure 25 minutes; scale: 2730 km/mm

ATLAS OF COMET HALLEY 1910 II

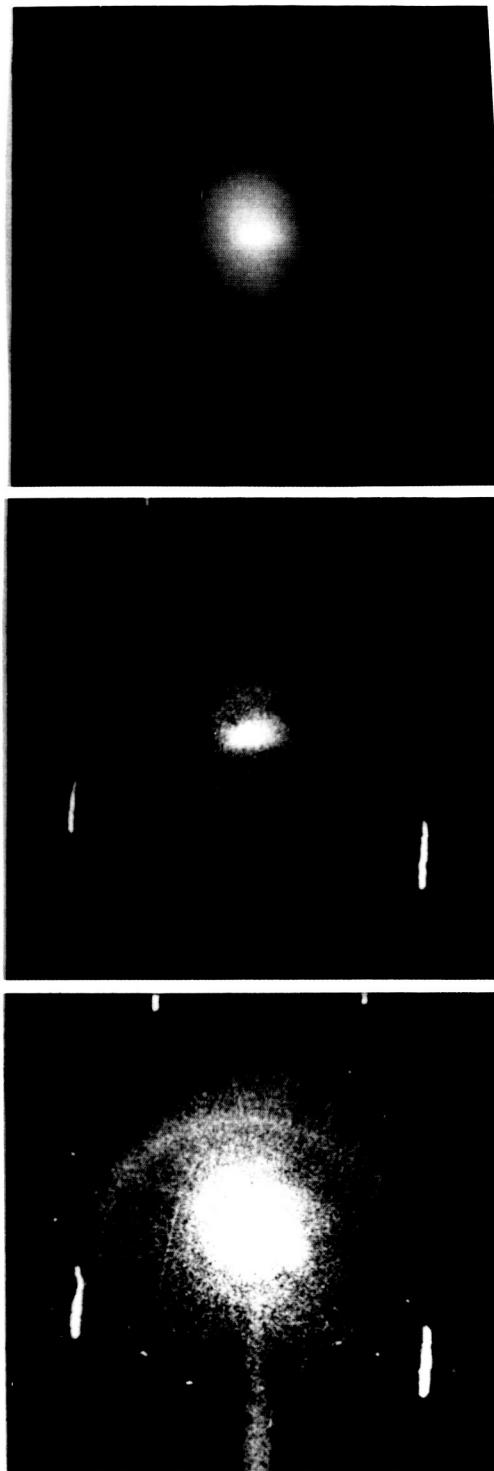


Figure 33. 1910 June 3.724; exposure 25 minutes; scale: 2730 km/mm

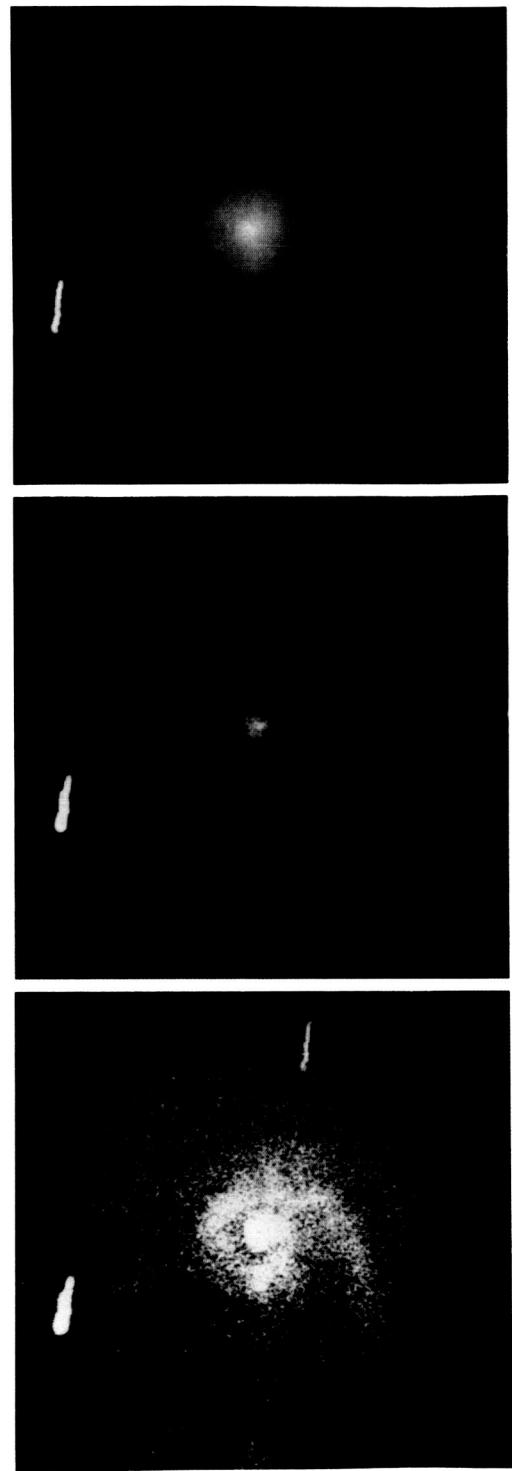


Figure 34. 1910 June 4.737; exposure 20 minutes; scale: 2730 km/mm

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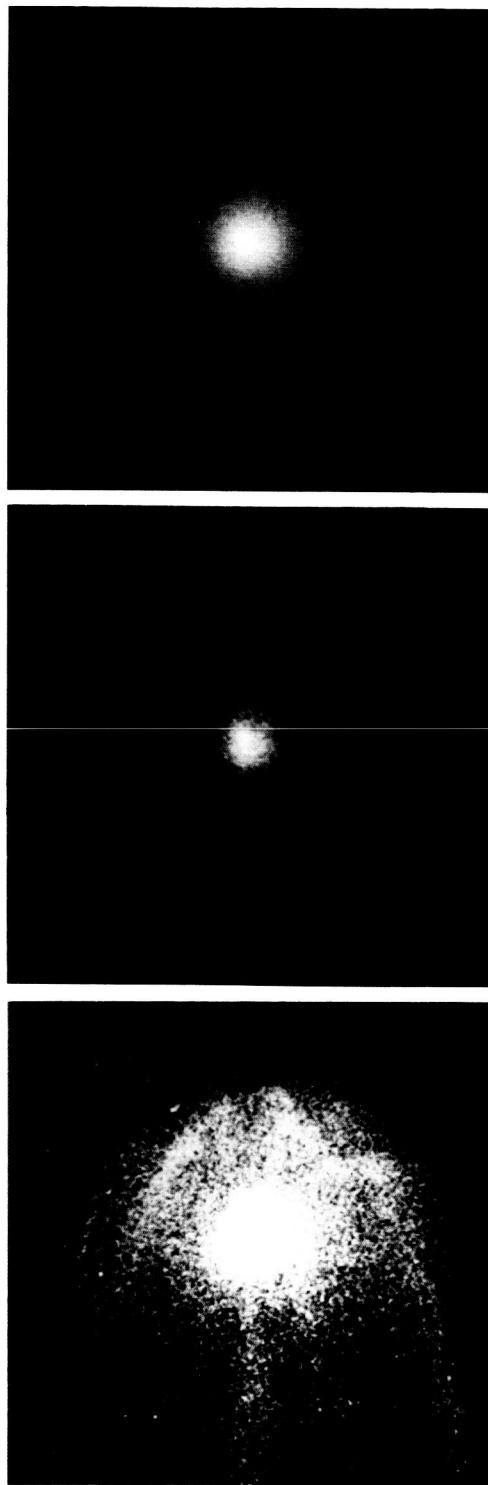


Figure 35. 1910 June 5.718; exposure 9
minutes; scale: 2730 km/mm

6

SPECTRA OF COMET HALLEY 1910 II

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SLIT SPECTRA



Figure 1. 1910 April 23.010; 50-minute exposure;
Lick Observatory, Mount Hamilton, California; $r =$
0.59 A.U.

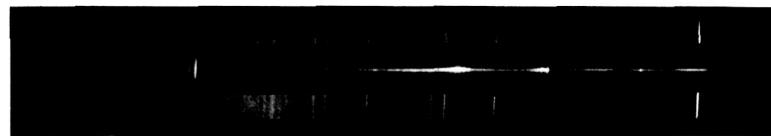


Figure 2. 1910 April 28.998; 77-minute exposure; Lick Observatory,
Mount Hamilton, California; $r = 0.62$ A.U.

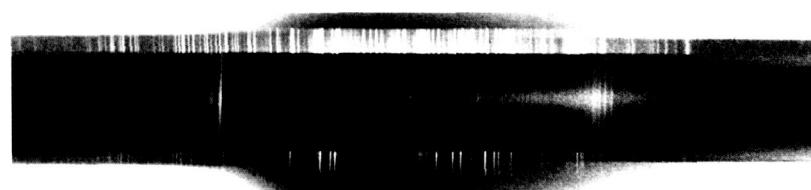


Figure 3. 1910 April 29.012; 20-minute exposure; Mount Wilson Observatory, Pasadena, California; $r = 0.62$ A.U.

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ATLAS OF COMET HALLEY 1910 II

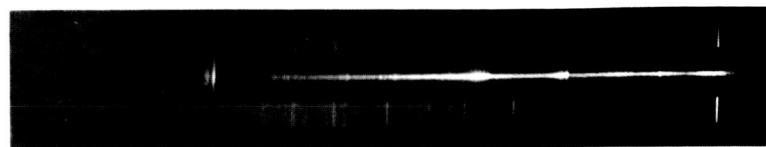


Figure 4. 1910 April 30.994; 80-minute exposure; Lick Observatory, Mount Hamilton, California; $r = 0.63$ A.U.

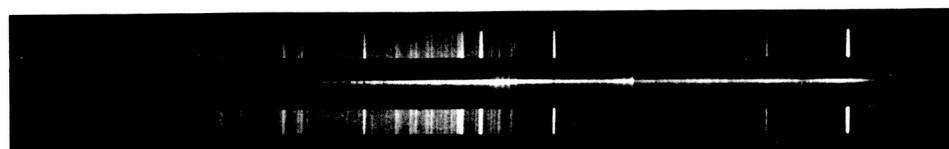


Figure 5. 1910 May 10.988; 85-minute exposure; Lick Observatory, Mount Hamilton, California; $r = 0.74$ A.U.

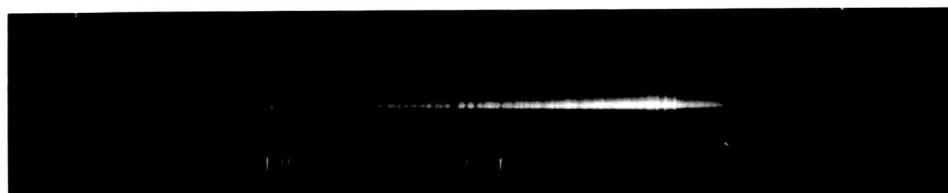


Figure 6. 1910 May 11.993; 30-minute exposure; Lick Observatory, Mount Hamilton, California; $r = 0.75$ A.U.

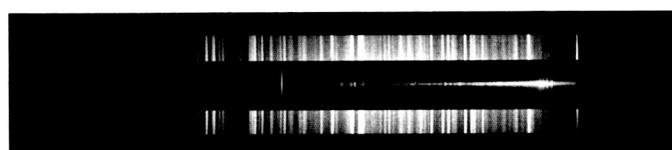


Figure 7. 1910 May 22.713; 105-minute exposure; Lick Observatory, Mount Hamilton, California; $r = 0.90$ A.U.

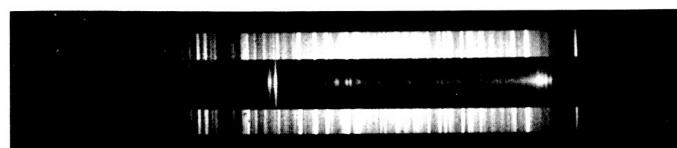


Figure 8. 1910 June 2.734; 145-minute exposure; Lick Observatory, Mount Hamilton, California; $r = 1.07$ A.U.

SPECTRA

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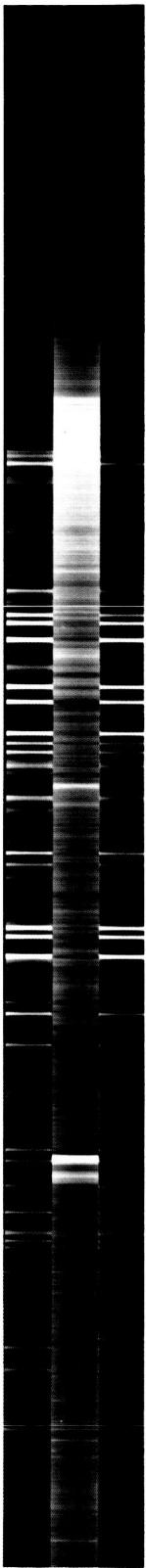


Figure 9. 1910 April 24.024; 12-minute exposure; Mount Wilson Observatory, Pasadena, California; $r = 0.59$ A.U.

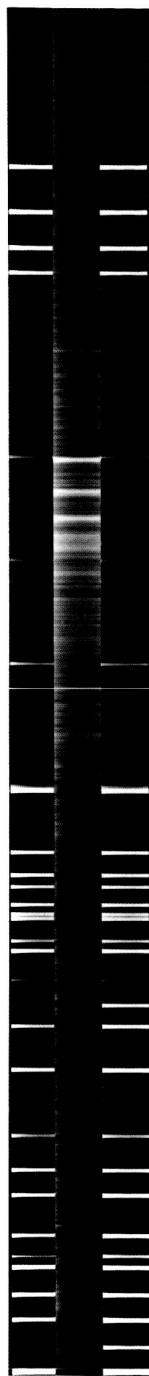


Figure 10. 1910 May 6.910; 124-minute exposure; Santiago, Chile; $r = 0.69$ A.U.

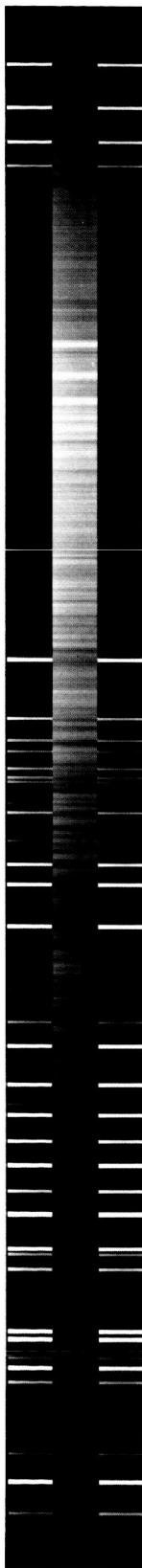


Figure 11. 1910 May 7.906; 124-minute exposure; Santiago, Chile; $r = 0.70$ A.U.

Figures 12 through 14 are slit spectrograms of Comet Halley made by V. M. Slipher at Lowell Observatory in Flagstaff, Arizona, U.S.A. (Lowell Observatory Bulletin No. 52, Vol. II, 1910).

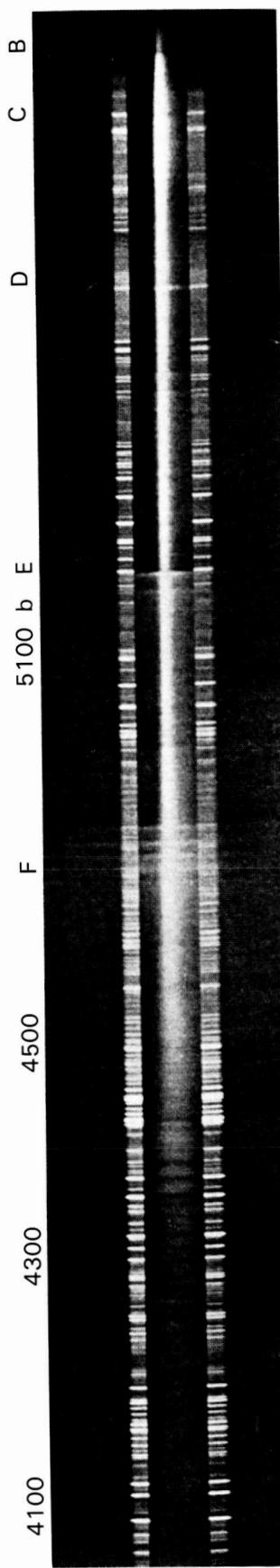


Figure 12. 1910 May 6.963; 106-minute exposure; $r = 0.69$ A.U.

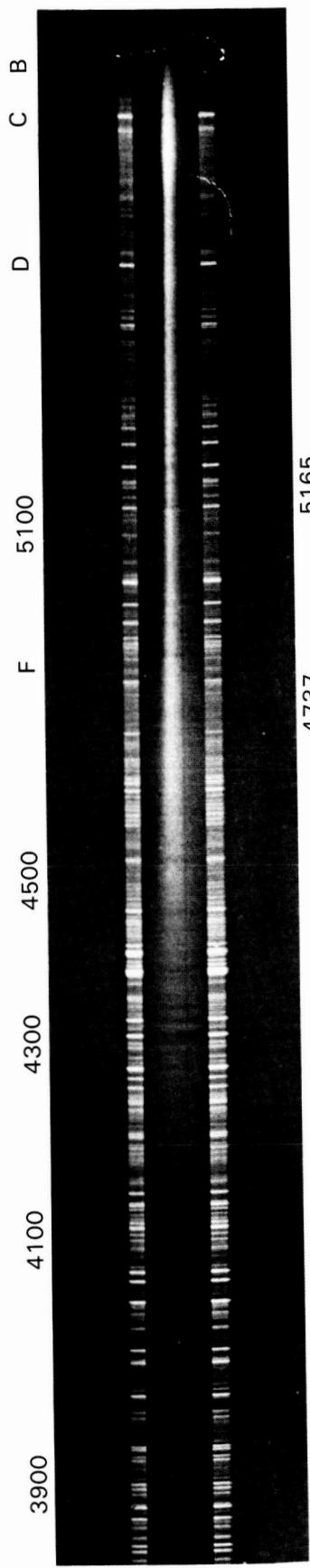


Figure 13. 1910 May 14.974; 45-minute exposure; $r = 0.79$ A.U.

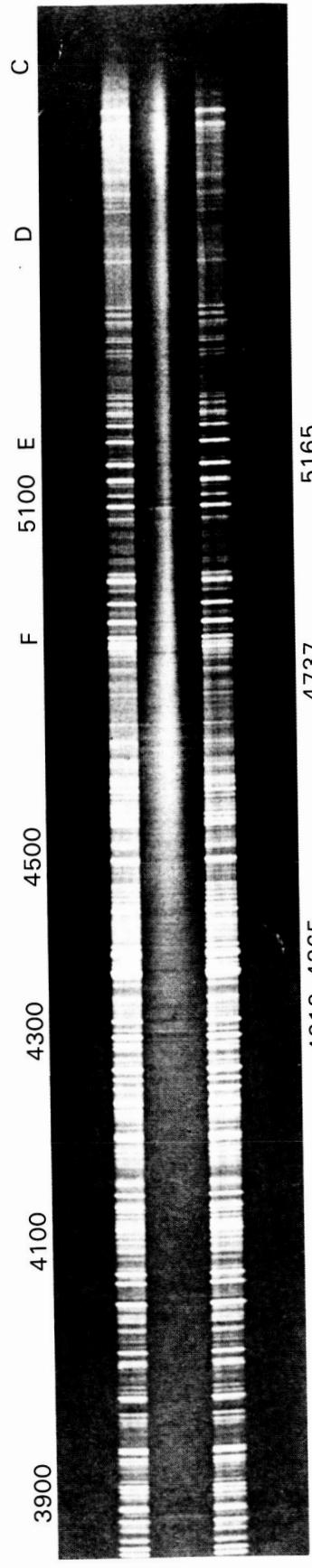


Figure 14. 1910 May 23.688; 160-minute exposure; $r = 0.91$ A.U.

OBJECTIVE PRISM SPECTRA

Figures 15 through 63 are objective-prism spectra of Comet Halley 1910. Figures 15 through 46 were taken at Lick Observatory in Mount Hamilton, California, U.S.A., and Figures 47 through 63 were taken at Lowell Observatory in Flagstaff, Arizona, U.S.A.



Figure 15. 1910 February 2.688; 62-minute exposure;
 $r = 1.58$ A.U.

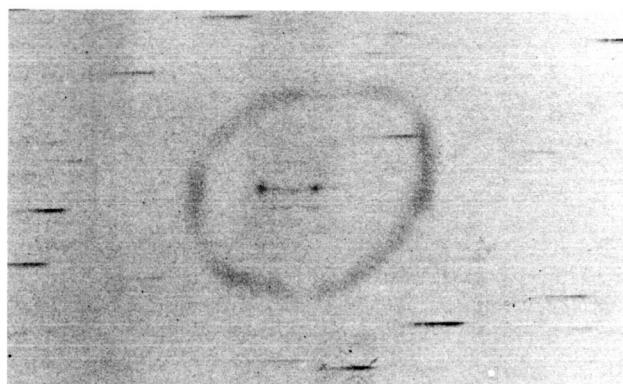


Figure 16. 1910 February 11.865; 76-minute exposure;
 $r = 1.43$ A.U.

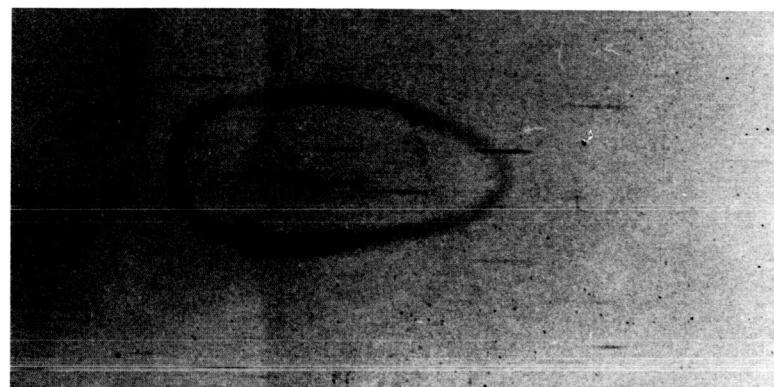


Figure 17. 1910 February 28.650; 65-minute exposure; $r = 1.18$ A.U.

ATLAS OF COMET HALLEY 1910 II

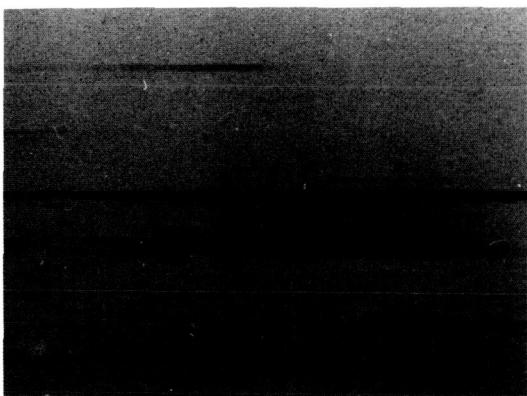


Figure 18. 1910 April 20.041; 42-minute exposure; $r = 0.59$ A.U.

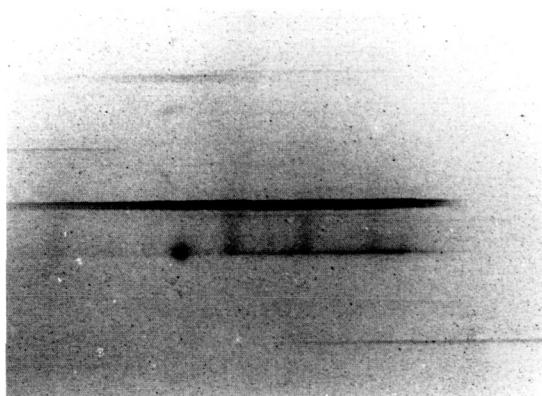


Figure 19. 1910 April 21.040; 43-minute exposure; $r = 0.59$ A.U.

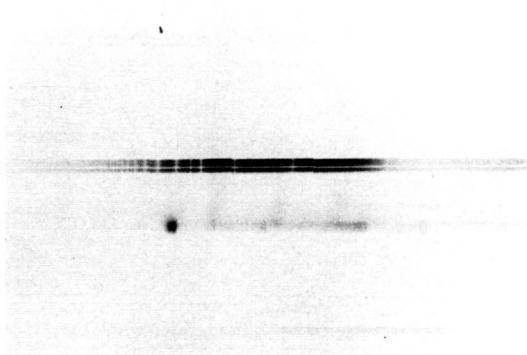


Figure 20. 1910 April 22.030; 51-minute exposure; $r = 0.59$ A.U.

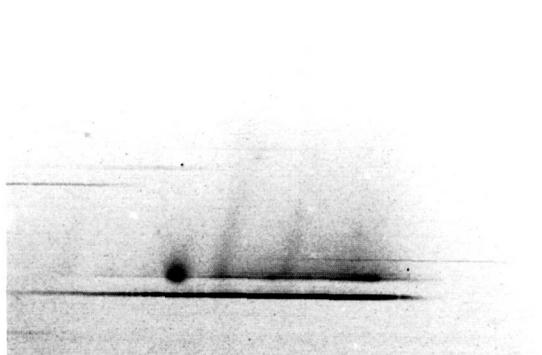


Figure 21. 1910 April 29.033; 51-minute exposure; $r = 0.62$ A.U.



Figure 22. 1910 May 1.031; 51-minute exposure; $r = 0.63$ A.U.



Figure 23. 1910 May 2.033; 53-minute exposure; $r = 0.64$ A.U.

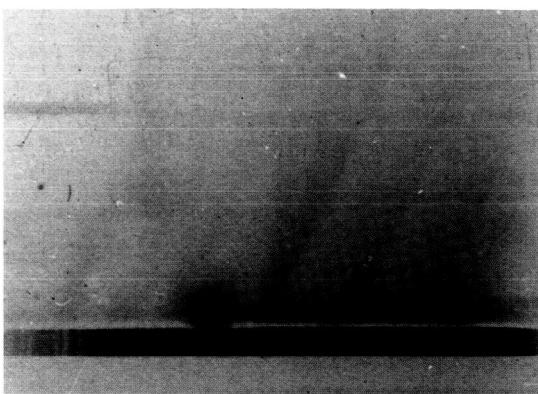


Figure 24. 1910 May 3.029; 60-minute exposure; $r = 0.65$ A.U.

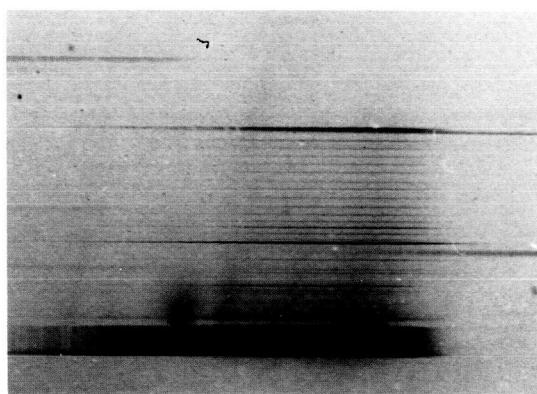


Figure 25. 1910 May 4.026; 68-minute exposure; $r = 0.66$ A.U.

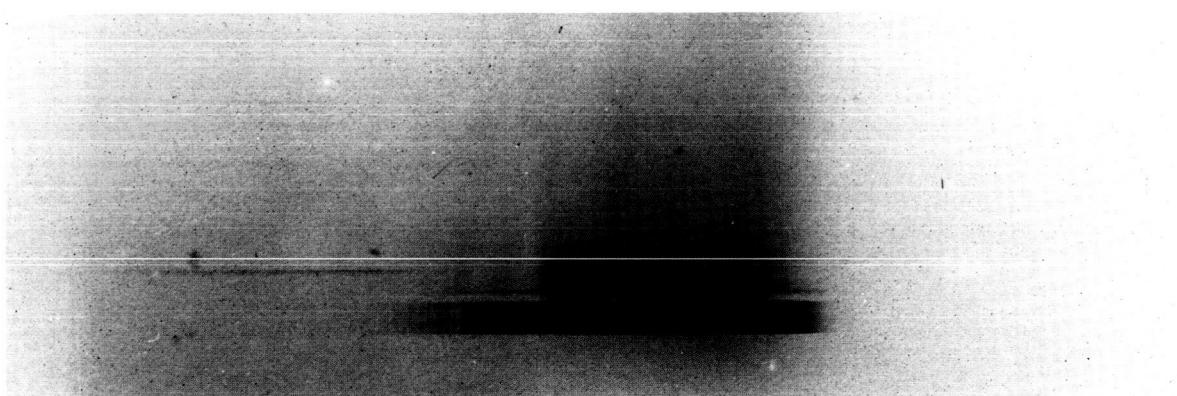


Figure 26. 1910 May 12.000; exposure time not available; $r = 0.75$ A.U.

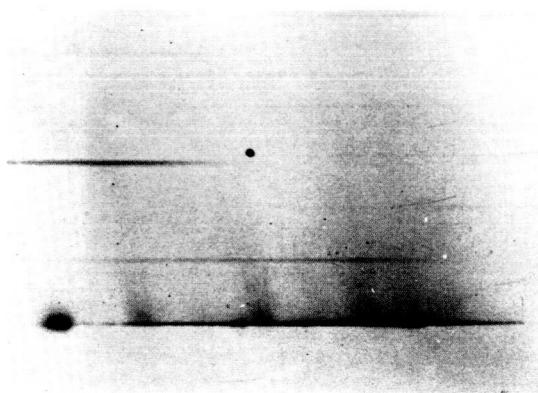


Figure 27. 1910 May 2.894; 38-minute exposure; $r = 0.65$

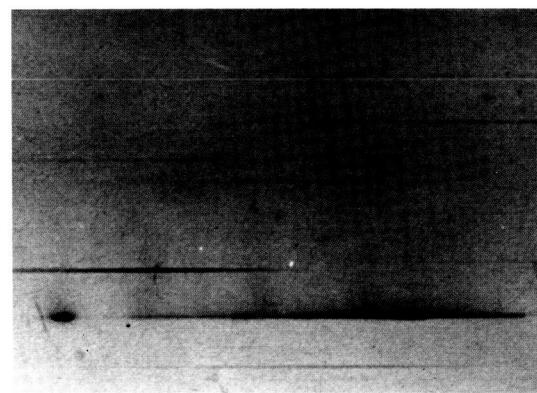


Figure 28. 1910 May 4.896; 96-minute exposure; $r = 0.67$

ATLAS OF COMET HALLEY 1910 II

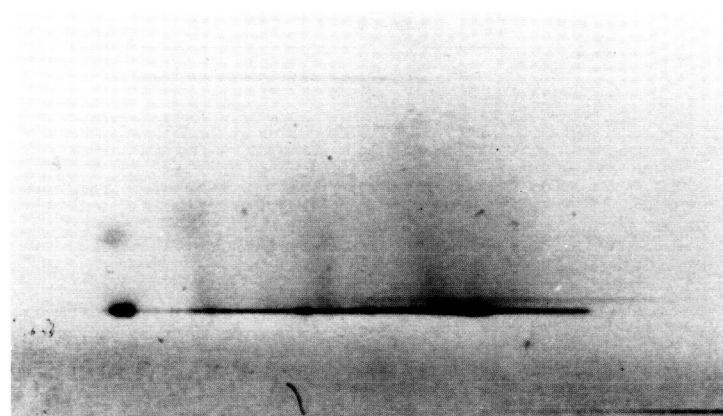


Figure 29. 1910 May 6.902; 92-minute exposure; $r = 0.69$ A.U.

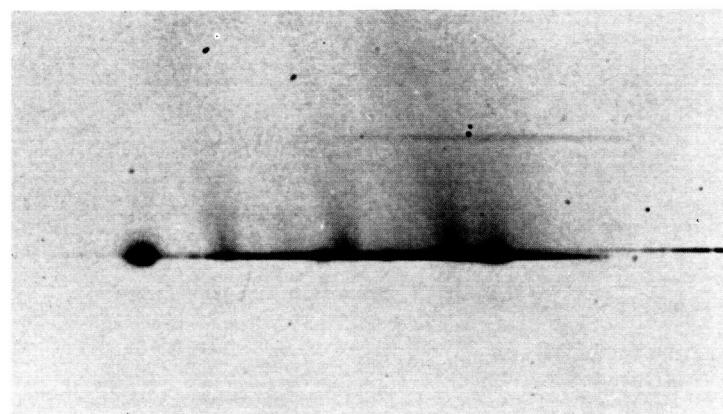


Figure 30. 1910 May 7.896; 91-minute exposure; $r = 0.70$ A.U.

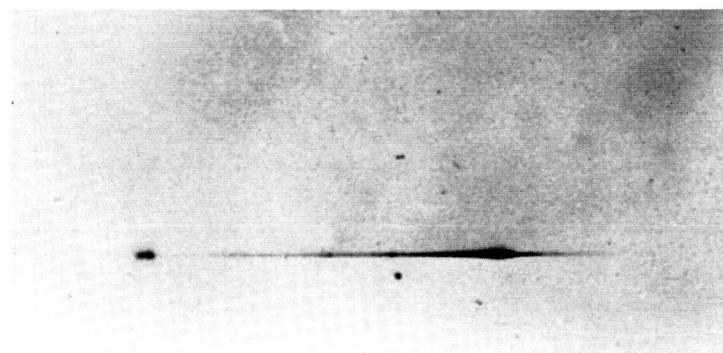


Figure 31. 1910 May 11.891; 46-minute exposure; $r = 0.75$ A.U.

SPECTRA

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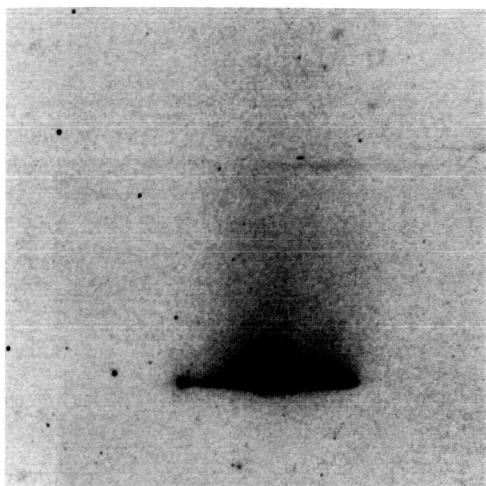


Figure 32. 1910 May 4.977; 45-minute exposure; $r = 0.67$ A.U.

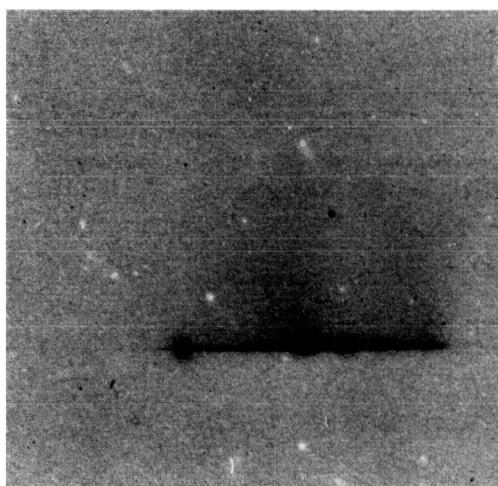


Figure 33. 1910 May 10.979; 61-minute exposure; $r = 0.74$ A.U.

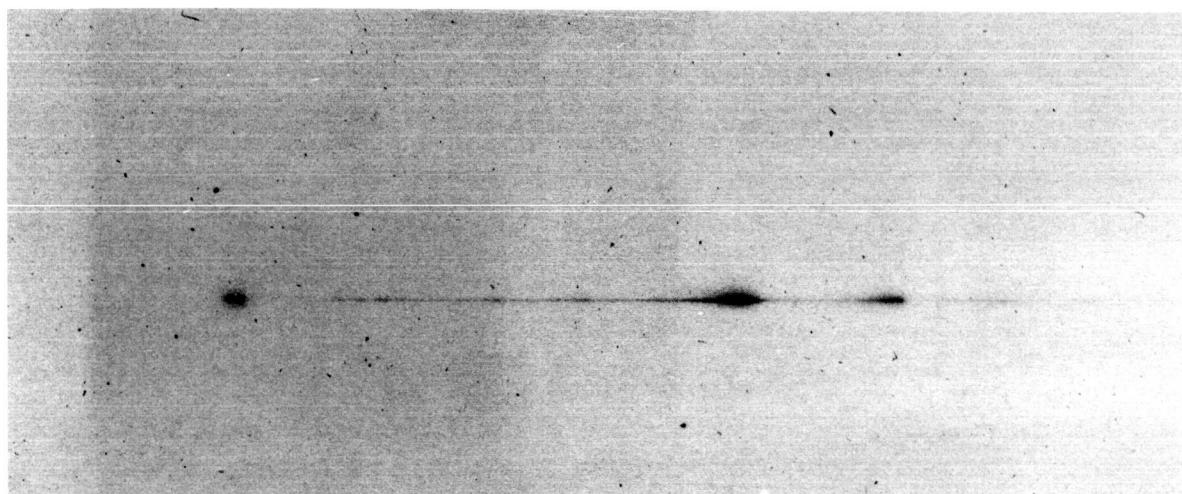


Figure 34. 1910 May 26.726; 82-minute exposure; $r = 0.96$ A.U.

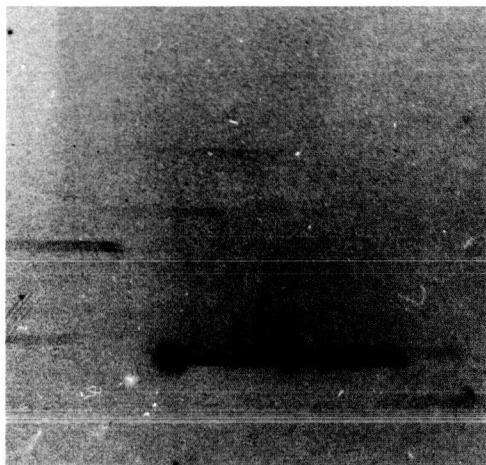


Figure 35. 1910 May 28.753; 132-minute exposure; $r = 0.99$ A.U.

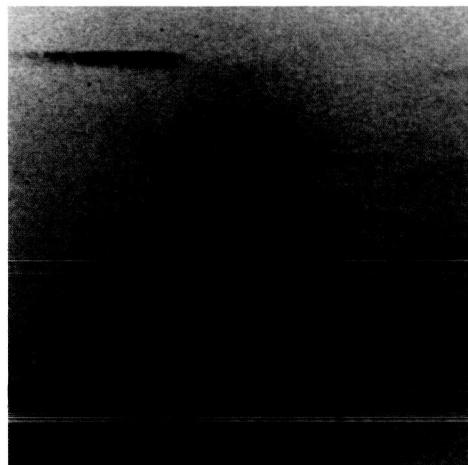


Figure 36. 1910 May 29.754; 142-minute exposure; $r = 1.00$ A.U.

ATLAS OF COMET HALLEY 1910 II

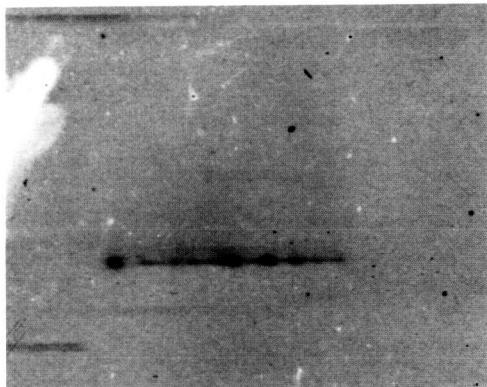


Figure 37. 1910 May 30.750; 181-minute exposure; $r = 1.02$ A.U.

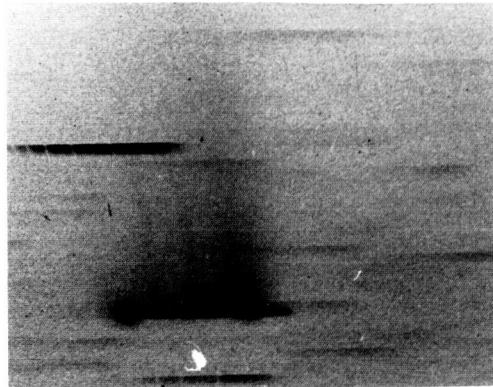


Figure 38. 1910 May 31.755; 175-minute exposure; $r = 1.04$ A.U.

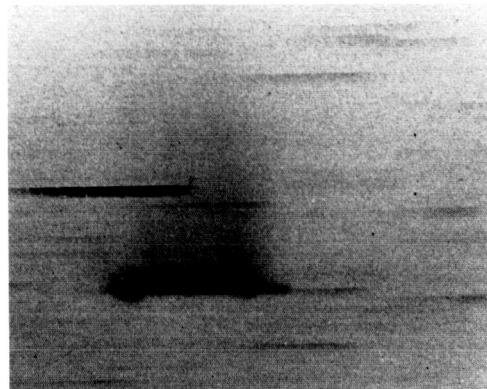


Figure 39. 1910 June 1.749; 136-minute exposure; $r = 1.05$ A.U.

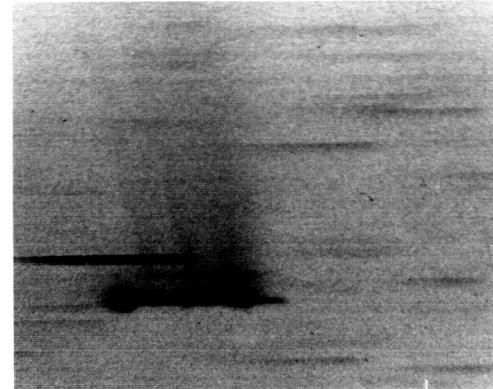


Figure 40. 1910 June 2.748; 135-minute exposure; $r = 1.07$ A.U.



Figure 41. 1910 June 3.748; 131-minute exposure; $r = 1.08$ A.U.

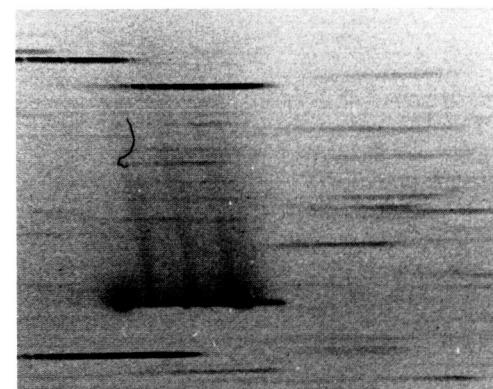


Figure 42. 1910 June 5.749; 94-minute exposure; $r = 1.10$ A.U.

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Figure 43. 1910 June 5.749; 135-minute exposure; $r = 1.11$ A.U.

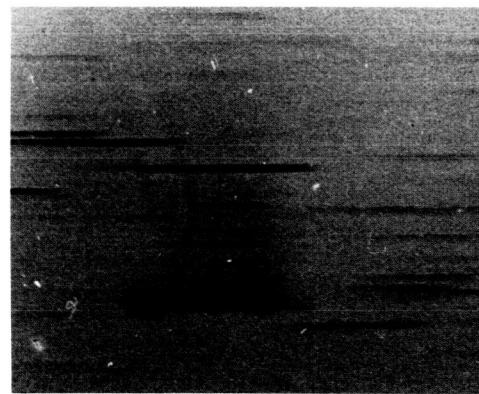


Figure 44. 1910 June 6.745; 126-minute exposure; $r = 1.13$ A.U.

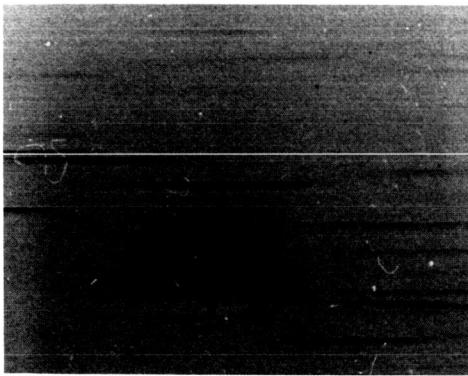


Figure 45. 1910 June 7.741; 120-minute exposure; $r = 1.14$ A.U.

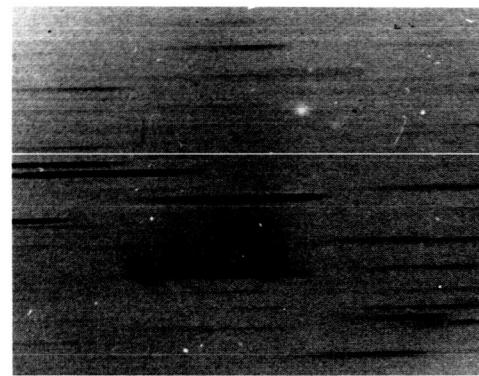


Figure 46. 1910 June 8.743; 120-minute exposure; $r = 1.16$ A.U.

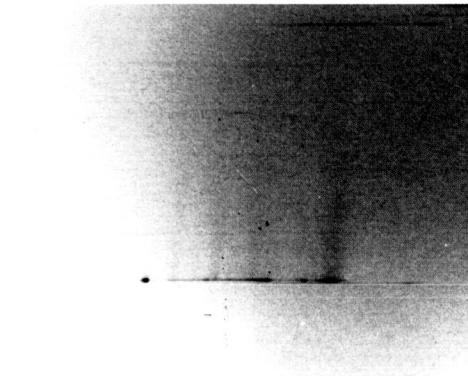


Figure 47. 1910 April 30.973; 30-minute exposure; $r = 0.63$ A.U.

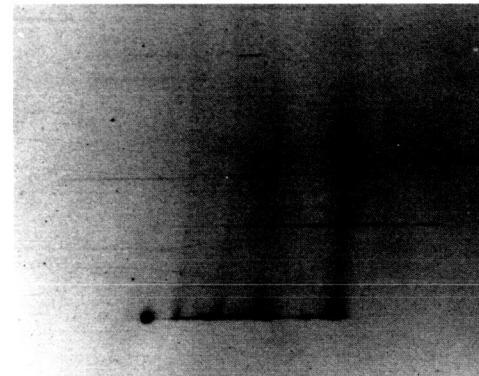


Figure 48. 1910 May 4.956; 54-minute exposure; $r = 0.67$ A.U.

ATLAS OF COMET HALLEY 1910 II

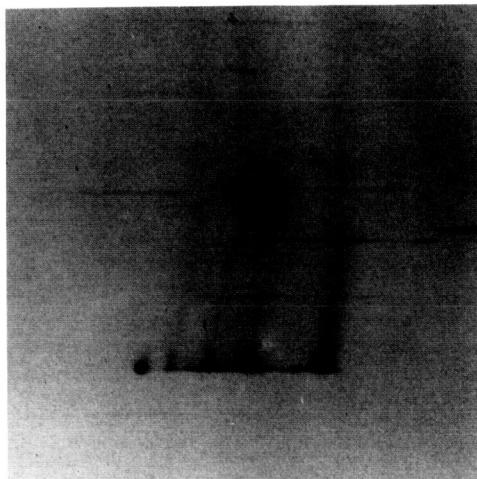


Figure 49. 1910 May 5.952; 62-minute exposure; $r = 0.68$ A.U.

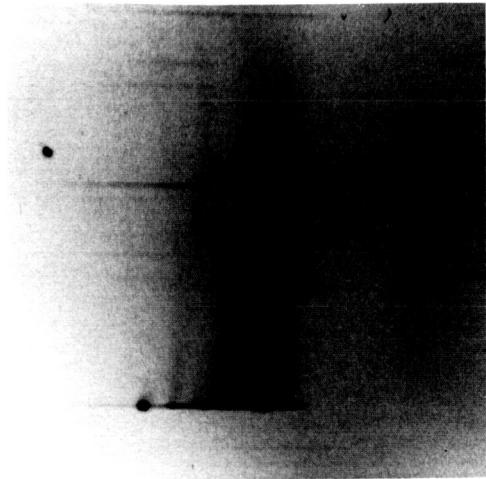


Figure 50. 1910 May 6.950; 67-minute exposure; $r = 0.69$ A.U.

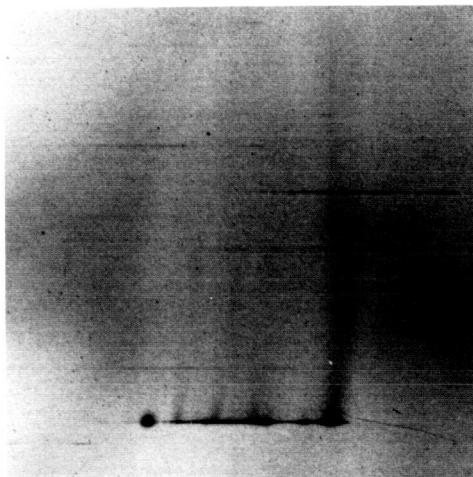


Figure 51. 1910 May 7.952; 61-minute exposure; $r = 0.70$ A.U.

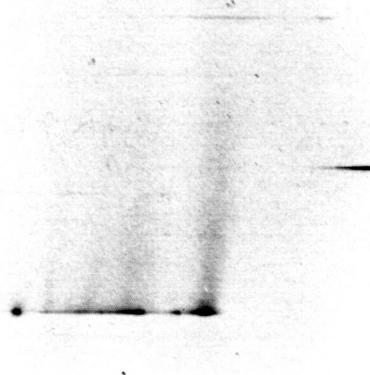


Figure 52. 1910 May 8.950; 69-minute exposure; $r = 0.71$ A.U.

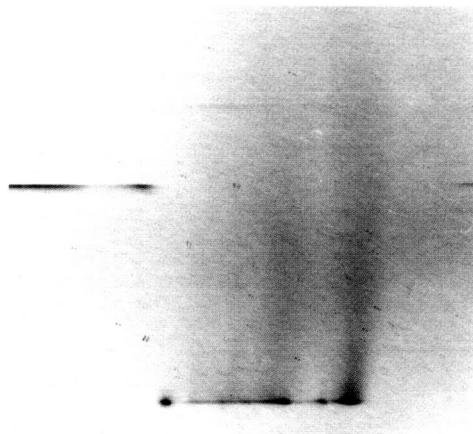


Figure 53. 1910 May 10.951; 60-minute exposure; $r = 0.75$ A.U.

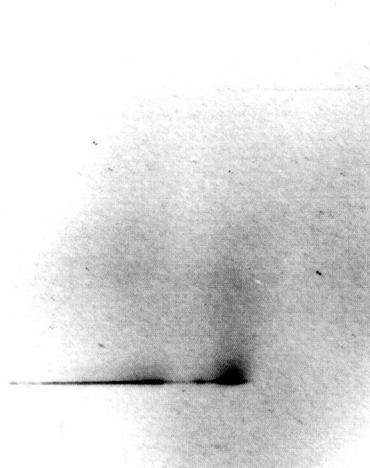


Figure 54. 1910 May 14.953; 46-minute exposure; $r = 0.79$ A.U.

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λ3883 4040 4215 4365 4737 5165 5635 (C)
Figure 55a. 1910 May 23.726; objective-prism spectrogram of head of Comet Halley, negative V37, bathed plate; 75-minute exposure; $r = 0.91$ A.U.



λ3883 4040 4215 4365 4737 5165 5635 (C)
Figure 55b. 1910 May 23.726; objective-prism spectrogram of head of Comet Halley, negative T38, Cramer Isochromatic plate; 75-minute exposure; $r = 0.91$ A.U.

SPECTRA



Figure 56. 1910 May 25.625; exposure time not available; $r = 0.94$ A.U.

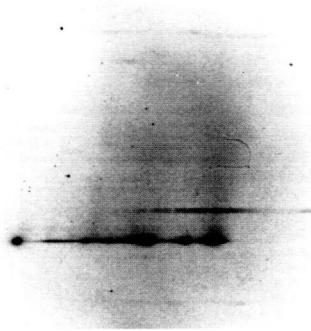


Figure 57. 1910 May 26.672; 64-minute exposure; $r = 0.96$ A.U.

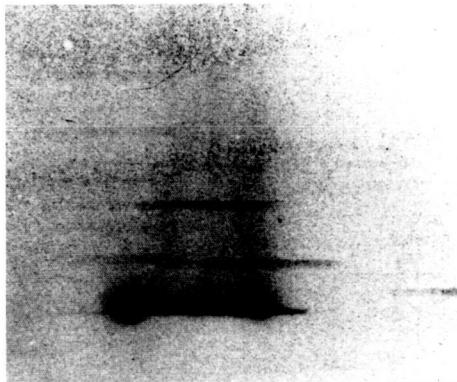


Figure 58. 1910 May 29.717; 135-minute exposure; $r = 1.01$ A.U.

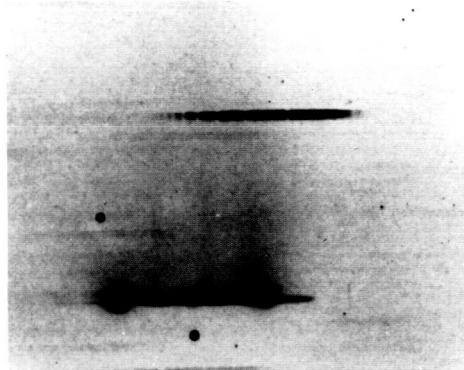


Figure 59. 1910 May 31.715; 120-minute exposure; $r = 1.04$ A.U.

ATLAS OF COMET HALLEY 1910 II

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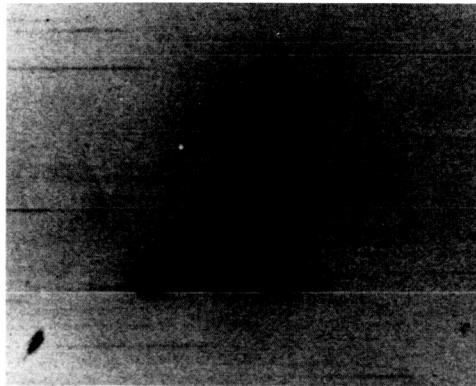


Figure 60. 1910 June 1.708; 120-minute exposure; $r = 1.05$ A.U.

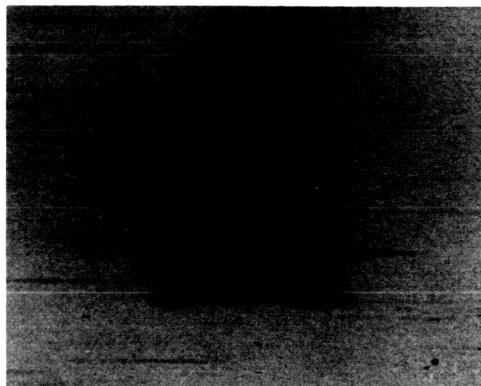


Figure 61. 1910 June 2.722; 120-minute exposure; $r = 1.07$ A.U.

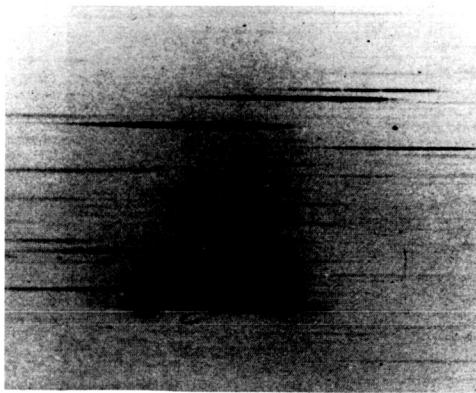


Figure 62. 1910 June 5.724; 125-minute exposure; $r = 1.11$ A.U.

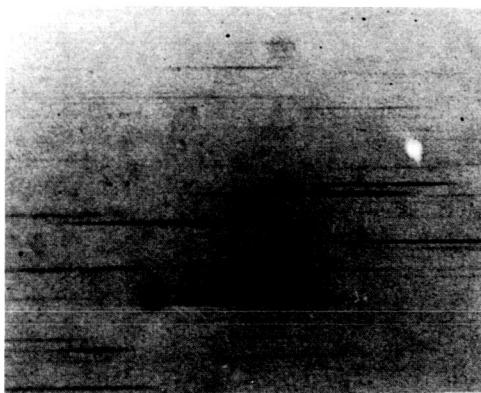


Figure 63. 1910 June 8.715; 124-minute exposure; $r = 1.16$ A.U.

SPECTRAL AND DIRECT IMAGES OF COMET HALLEY 1910



Figure 64a. 1910 May 4.956; objective-prism spectrogram; 54-minute exposure; scale: 1 cm = 1° ; $r = 0.67$ A.U.



Figure 64b. 1910 May 4.956; direct photograph; 54-minute exposure; scale: 1 cm = 1° ; $r = 0.67$ A.U.

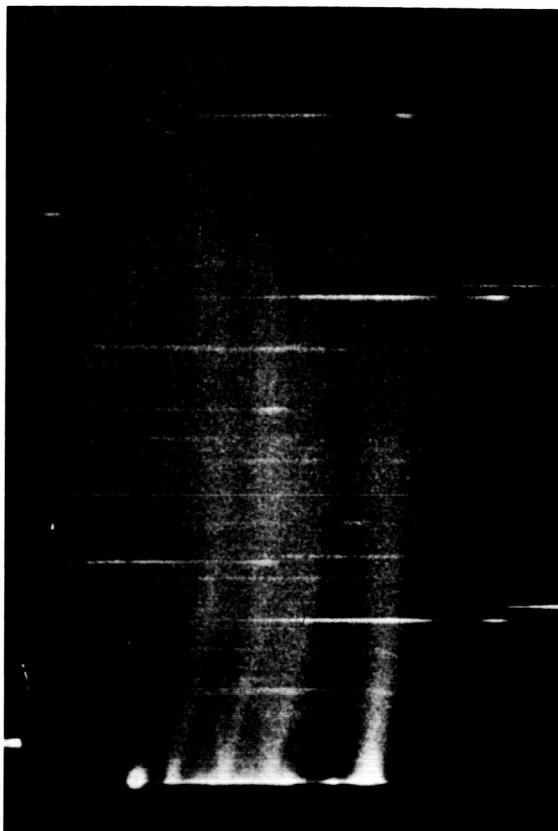


Figure 65a. 1910 May 5.952; objective-prism spectrogram; 62-minute exposure; scale: 1 cm = 1° ; $r = 0.68$ A.U.



Figure 65b. 1910 May 5.952; direct photograph; 62-minute exposure; scale: 1 cm = 1° ; $r = 0.68$ A.U.

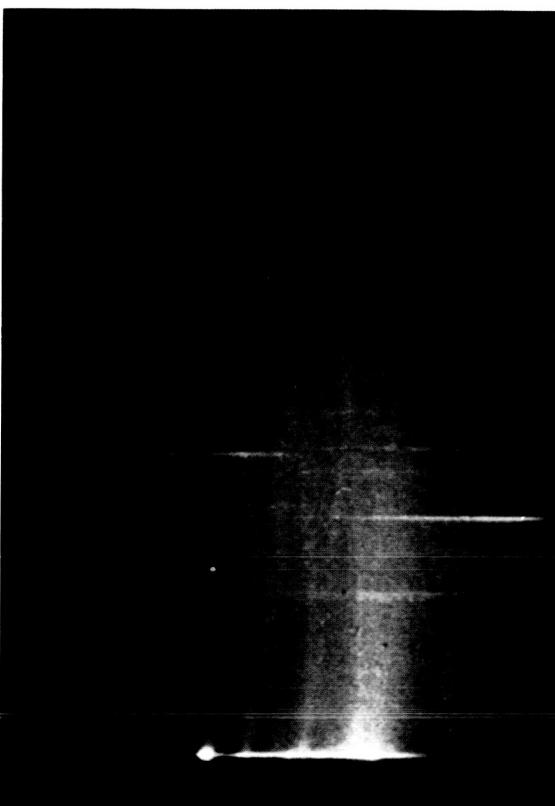


Figure 66a. 1910 May 6.950; objective-prism spectrogram; 67-minute exposure; scale: 1 cm = 1.2° ; $r = 0.69$ A.U.



Figure 66b. 1910 May 6.950; direct photograph; 67-minute exposure; scale: 1 cm = 1.2° ; $r = 0.69$ A.U.

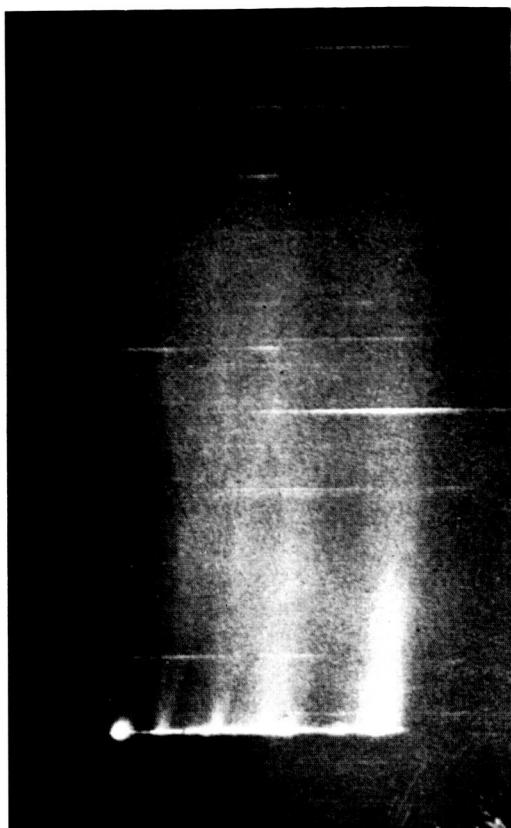


Figure 67a. 1910 May 7.952; objective-prism spectrogram; 61-minute exposure; scale: 1 cm = 1.2° ; $r = 0.70$ A.U.



Figure 67b. 1910 May 7.952; direct photograph; 61-minute exposure; scale: 1 cm = 1.2° ; $r = 0.70$ A.U.



Figure 68a. 1910 May 10.951; objective-prism spectrogram; 60-minute exposure; scale: 1 cm = 1.2° ; $r = 0.74$ A.U.

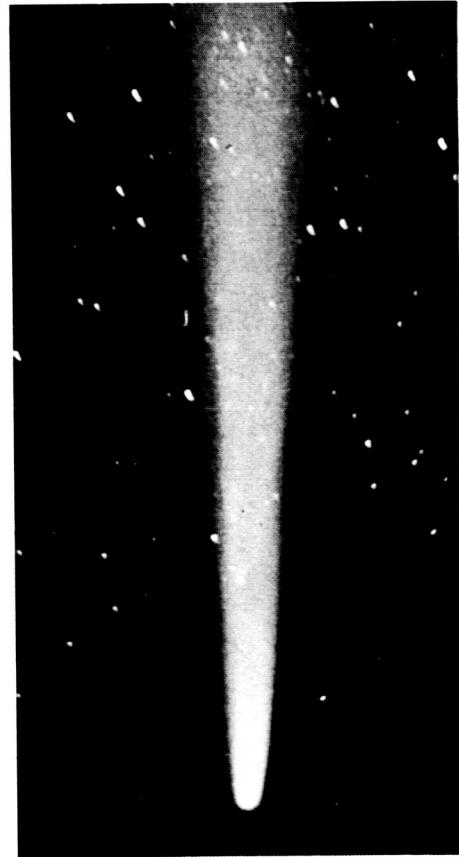


Figure 68b. 1910 May 10.951; direct photograph; 60-minute exposure; scale: 1 cm = 1.2° ; $r = 0.74$ A.U.

APPENDIX A

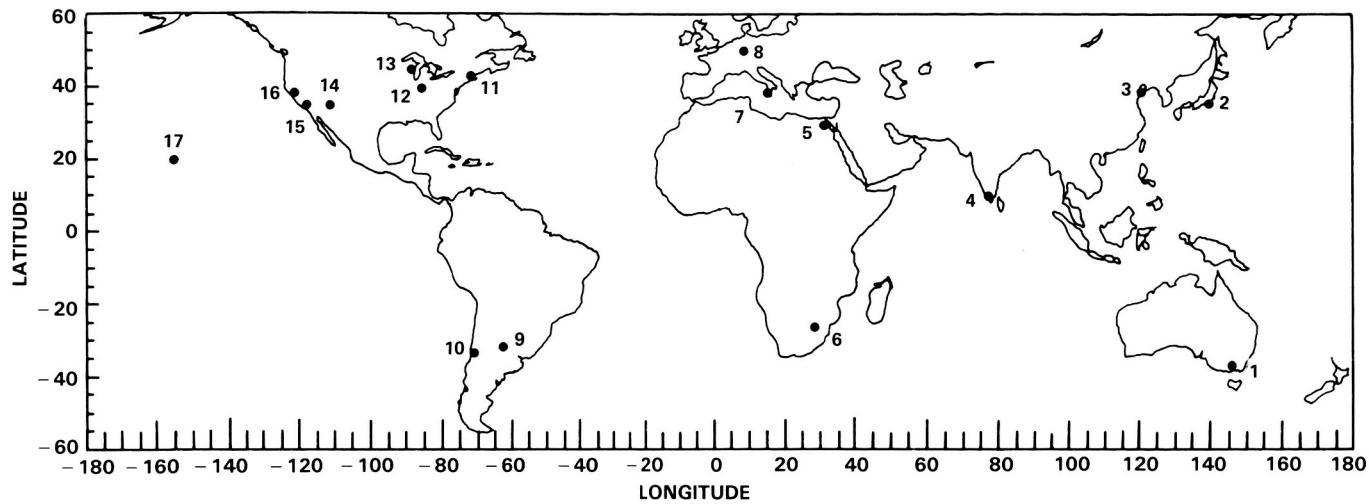
FIGURES AND CHARTS

APPENDIX A

FIGURES AND CHARTS

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List of Observatories

Number on Map	Observatory	Longitude (h)	Longitude (°)	Latitude (°)
1	Melbourne, Australia	+ 9 ^h 40 ^m	+ 145° 0	- 37° 50'
2	Tokyo, Japan	+ 9 ^h 19 ^m	+ 139° 45	+ 35° 39'
3	Dairen, Manchuria (Tokyo Station)	+ 8 ^h 07 ^m	+ 121° 40	+ 38° 55'
4	Kodaikanal, India	+ 5 ^h 10 ^m	+ 77° 28	+ 10° 01'
5	Khedivial, Helwan, Egypt	+ 2 ^h 05 ^m	+ 31° 23	+ 29° 52'
6	Transvaal, Johannesburg, South Africa	+ 1 ^h 52 ^m	+ 28° 0	- 26° 11'
7	Catania, Sicily, Italy	+ 1 ^h 01 ^m	+ 15° 05	+ 37° 30'
8	Heidelberg, Germany	+ 0 ^h 35 ^m	+ 8° 45	+ 49° 25'
9	Cordoba, Argentina	- 4 ^h 17 ^m	- 64° 15	- 31° 25'
10	Santiago, Chile (Lick Southern Station)	- 4 ^h 43 ^m	- 70° 38	- 33° 27'
11	Harvard, Cambridge, Massachusetts, U.S.A.	- 4 ^h 45 ^m	- 71° 15	+ 42° 23'
12	Indiana, Bloomington, Indiana, U.S.A.	- 5 ^h 46 ^m	- 86° 30	+ 39° 10'
13	Yerkes, Williams Bay, Wisconsin, U.S.A.	- 5 ^h 54 ^m	- 88° 33	+ 42° 34'
14	Lowell, Flagstaff, Arizona, U.S.A.	- 7 ^h 27 ^m	- 111° 45	+ 35° 13'
15	Mt. Wilson, Pasadena, California, U.S.A.	- 7 ^h 52 ^m	- 118° 04	+ 34° 13'
16	Lick, Mt. Hamilton, California, U.S.A.	- 8 ^h 07 ^m	- 121° 45	+ 37° 20'
17	Diamond Head, Hawaii, U.S.A. (Yerkes Station)	- 10 ^h 31 ^m	- 157° 49	+ 21° 16'

Figure 1. Geographical Distribution of Observations

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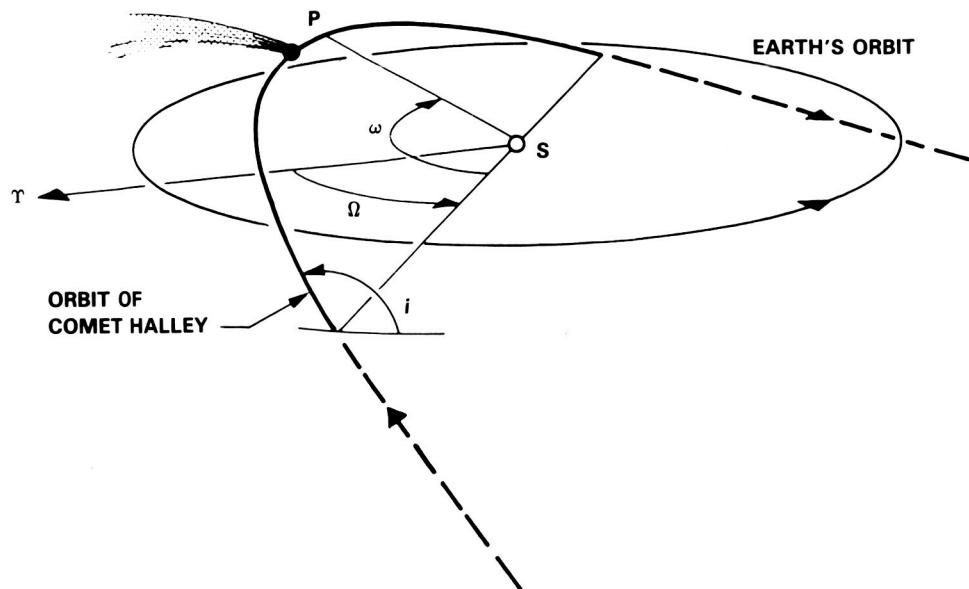


Figure 2. Angular elements of the orbit of Comet Halley. The orbital inclination i is 162° , the longitude of the ascending node Ω is 58° , and the argument of perihelion ω is 112° .

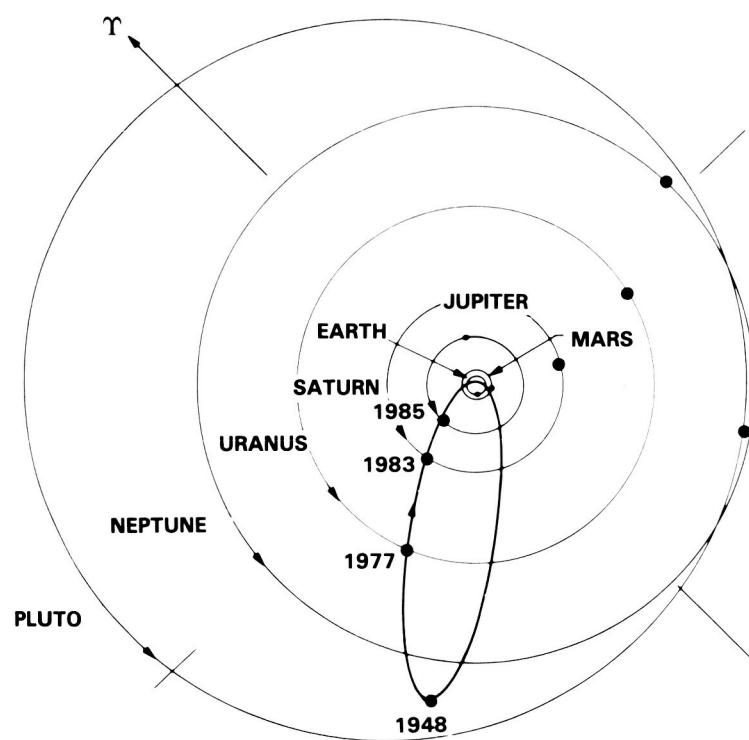


Figure 3. Ecliptic plane projection of Comet Halley's orbit (1910 to 1986) within the Solar System. The planetary positions are indicated for the time of the comet's perihelion passage. Comet Halley's position at given dates is indicated.

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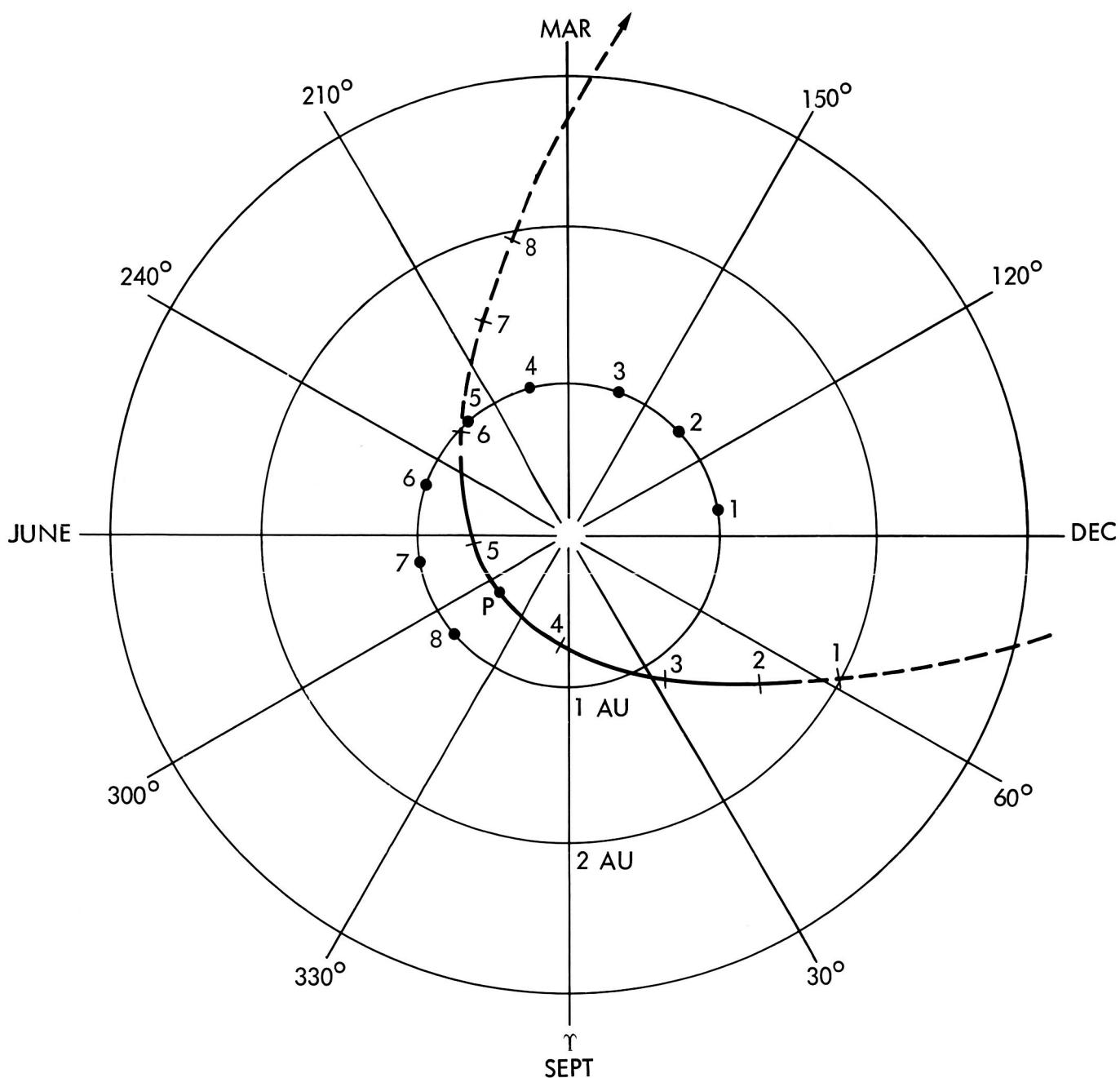
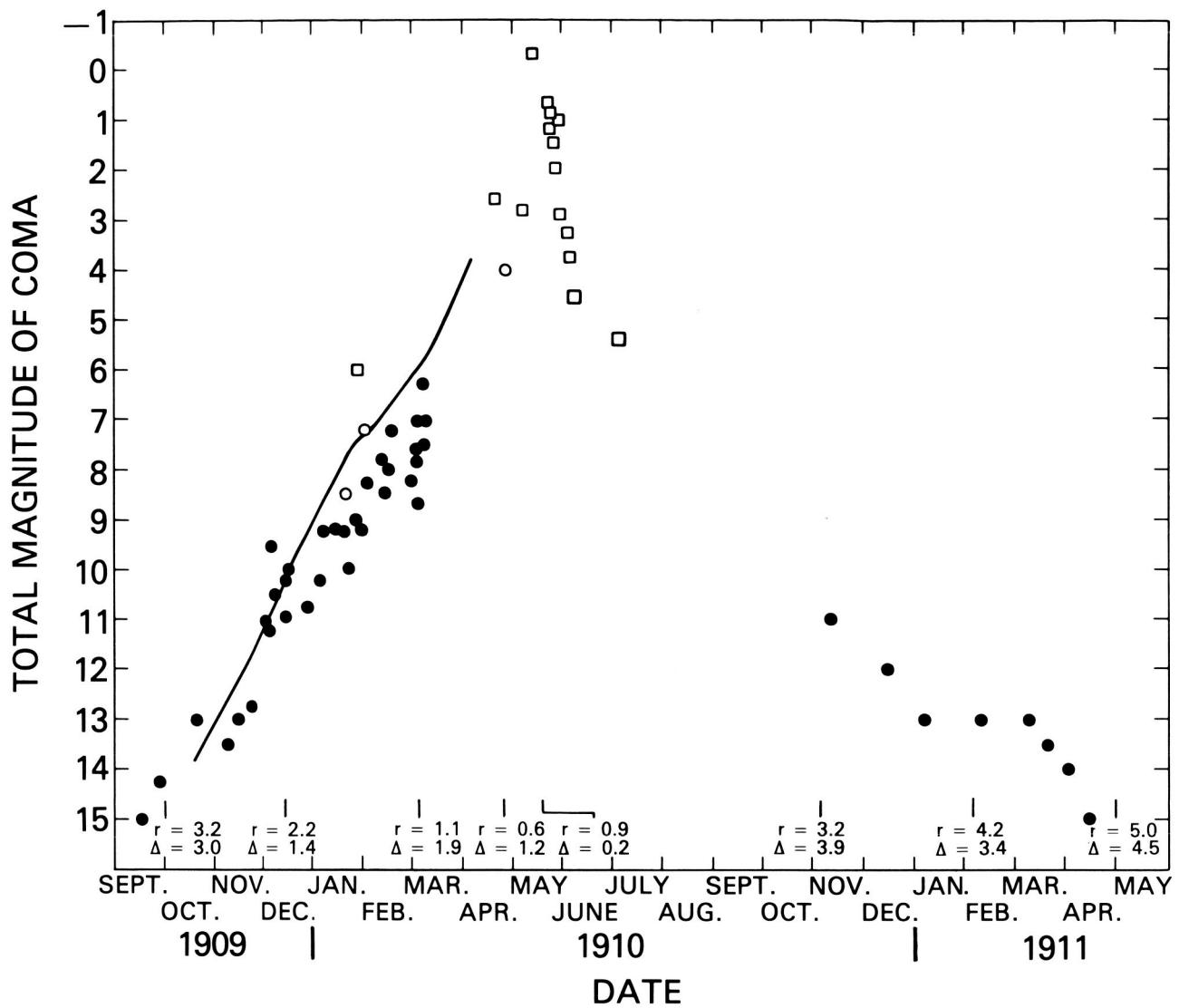


Figure 4. Relative positions of Comet Halley and Earth, 1910. The numbers along the orbital path of Comet Halley and Earth indicate the respective positions of the comet and Earth on the first day of that month in 1910. For example, the number 2 refers to the position of the Earth and the comet on the first day of the second month (February). The letter "P" on the comet's orbit refers to the position of perihelion. The solid line indicates the part of Comet Halley's orbit that is above the ecliptic plane and the dashed line shows the portion of the comet's orbit that is below the ecliptic.



Legend

- Refractor
- Opera Glasses
- Naked Eye

Figure 5. Light curve of P/Halley 1910 II. This figure shows the variation of the reported total magnitude of Comet Halley's coma as a function of time during its 1909 to 1911 apparition. The data plotted are a representative sample of the raw 1909 to 1911 data. No corrections have been made to account for the effect of using different instrumentation (e.g., Morris, C.S., 1973, *Publ. Astron. Soc. Pac.*, **85**, p. 470). For comparison, the observed 1985 to 1986 pre-perihelion light curve, corrected to the 1909 to 1910 geometric conditions, has also been plotted as a solid line. Further discussion of Comet Halley's light curve can be found in Morris, C. S. and D. W. E. Green, 1982, *Astron J.*, **87**, p. 918, and Bortle, J. E. and C. S. Morris, 1984, *Sky and Telescope*, **67**, p. 9.

APPENDIX B

TABLES

APPENDIX B

TABLES

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Table 1
List of Observatories

Number on Map	Observatory	Longitude (h)	Longitude (°)	Latitude (°)
1	Melbourne, Australia	+ 9 ^h 40 ^m	+ 145° 0	- 37° 50'
2	Tokyo, Japan	+ 9 ^h 19 ^m	+ 139°45'	+ 35° 39'
3	Dairen, Manchuria (Tokyo Station)	+ 8 ^h 07 ^m	+ 121°40'	+ 38° 55'
4	Kodaikanal, India	+ 5 ^h 10 ^m	+ 77°28'	+ 10° 01'
5	Khedivial, Helwan, Egypt	+ 2 ^h 05 ^m	+ 31°23'	+ 29° 52'
6	Transvaal, Johannesburg, South Africa	+ 1 ^h 52 ^m	+ 28° 0	- 26° 11'
7	Catania, Sicily, Italy	+ 1 ^h 01 ^m	+ 15°05'	+ 37° 30'
8	Heidelberg, Germany	+ 0 ^h 35 ^m	+ 8°45'	+ 49° 25'
9	Cordoba, Argentina	- 4 ^h 17 ^m	- 64°15'	- 31° 25'
10	Santiago, Chile (Lick Southern Station)	- 4 ^h 43 ^m	- 70°38'	- 33° 27'
11	Harvard, Cambridge, Massachusetts, U.S.A.	- 4 ^h 45 ^m	- 71°15'	+ 42° 23'
12	Indiana, Bloomington, Indiana, U.S.A.	- 5 ^h 46 ^m	- 86°30'	+ 39° 10'
13	Yerkes, Williams Bay, Wisconsin, U.S.A.	- 5 ^h 54 ^m	- 88°33'	+ 42° 34'
14	Lowell, Flagstaff, Arizona, U.S.A.	- 7 ^h 27 ^m	- 111°45'	+ 35° 13'
15	Mt. Wilson, Pasadena, California, U.S.A.	- 7 ^h 52 ^m	- 118°04'	+ 34° 13'
16	Lick, Mt. Hamilton, California, U.S.A.	- 8 ^h 07 ^m	- 121°45'	+ 37° 20'
17	Diamond Head, Hawaii, U.S.A. (Yerkes Station)	- 10 ^h 31 ^m	- 157°49'	+ 21° 16'

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Table 2
Telescopes and Cameras

Observatory	Symbol	Instrument			
		Type	Aperture (cm)	F.L. (cm)	Scale (in/mm)
Catania	EF	Refractor	34.0	344.0	60
Cordoba	AG	Astrograph refractor	33.0	344.0	60
	PB	Brashear doublet lens	12.5	64.0	322
Dairen	S	Steinheil lens	7.8	24.5	841
	D	Dallmeyer lens	10.0	88.2	234
Harvard	A	Reflector	61.0	--	60
	AC	Refractor	4.0	--	600
	B	Refractor	20.0	--	179
	C	Refractor	28.0	--	84
	I	Refractor	20.0	--	163
	MA	Metcalf refractor	41.0	--	98
	MC	Metcalf refractor	61.0	--	60
Heidelberg	R72	Reflector	72.0	--	73
Helwan	R30	Reflector	76.0	343.0	60
Indiana	R8	Reflector	20.0	102.0	204
Kodaikanal	10.45	Refractor	1.1	13.0	1624
	11.5	Refractor	3.8	29.2	706
	15.0	Refractor	12.7	86.0	240
	19.25	Reflector	23.5	188.0	110
Lick: Mt. Hamilton	CR	Crossley 36-inch reflector	91.4	534.0	39
	D	Dallmeyer 6-inch lens	15.2	83.0	250
	L	Lantern lens	4.1	12.7	1648
	WF	Willard 5-inch lens	13.3	65.8	314
	WS	Willard 6-inch lens	15.2	78.0	264
	Z	Zeiss planar lens	4.1	15.5	1330
Lick: Santiago	S	Chile, Hermagis 6-inch lens	15.5	73.7	280

Table 2 (Continued)

Observatory	Symbol	Instrument			
		Type	Aperture (cm)	F.L. (cm)	Scale (in/mm)
Lowell	V	Voigtlander lens	3.6	19.7	1050
	G7	Goerz lens	3.7	17.8	1160
	C8	Cooke lens	4.6	20.8	990
	T	Tessar lens	—	21.0	982
	C10	Cooke lens	5.9	26.4	781
	G14	Goerz lens	6.5	35.6	580
	B	Brashear lens	12.7	88.9	232
	R	Reflector - 40 inch	101.6	—	37
Melbourne	R6	Doublet lens	15.0	106.7	194
	MA	Astrograph refractor	33.0	343.0	60
Mt. Wilson	MWR	Reflector - 60 inch	152.4	759.5	27
Tokyo	SD	Dallmeyer lens	3.2	7.8	2667
	D	Dallmeyer lens	8.7	25.4	892
	B	Brashear lens	20.3	120.3	173
Transvaal	TC	Cooke lens	25.4	113.0	180
Yerkes: Williams Bay, Wisconsin	T210	Tessar lens	—	21.0	982
	G	Goerz lens	—	—	439
	X	Lens	—	—	358
	B6	Bruce 6-inch lens	15.2	—	264
	B10	Bruce 10-inch lens	25.4	—	161
	R24	Reflector - 24 inch	61.0	—	87
	HE-T	Tessar lens	5.7	25.1	822
Yerkes: Diamondhead Expedition	HE	Brashear lens	15.2	80.8	254

Table 3
Photographs of Comet Halley 1910 II

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
1	1909	9	11.565	HEIDELBERG	R72	D571	60	3.421	3.552	74.3	16.4	9.5E4
2	1909	9	13.987	LICK	CR	2	60	3.394	3.483	76.6	16.7	4.9E4
3	1909	9	14.979	LICK	CR	3	76	3.383	3.454	77.5	16.9	4.9E4
4	1909	10	12.910	LICK	CR	10	36	3.059	2.626	106.2	18.2	3.7E4
5	1909	11	17.823	HARVARD	A24	A10008	142	2.745	1.912	139.8	13.4	2.1E4
6	1909	11	15.848	LICK	CR	24	130	2.644	1.728	152.4	10.0	2.4E4
7	1909	12	4.824	LOWELL	R40	P7-03	107	2.401	1.425	169.8	4.1	1.9E4
8	1909	12	6.678	HARVARD	I8	I36358	108	2.374	1.408	166.5	5.5	4.2E4
9	1909	12	6.872	LOWELL	R40	P7-04	36	2.374	1.406	166.2	5.7	1.9E4
10	1909	12	8.815	LOWELL	R40	P7-05	17	2.349	1.391	162.4	7.2	1.9E4
11	1909	12	9.635	HARVARD	I8	I36375	10	2.338	1.385	160.8	7.9	4.1E4
12	1909	12	10.676	HARVARD	I8	I36382	60	2.324	1.379	158.7	8.8	4.1E4
13	1909	12	10.786	LOWELL	R40	P7-07	63	2.323	1.378	158.5	8.9	1.8E4
14	1909	12	13.796	LICK	CR	29	35	2.283	1.364	152.4	11.5	1.9E4
15	1909	12	14.789	LICK	CR	30	120	2.270	1.361	160.4	12.4	1.9E4
16	1909	12	15.741	LICK	CR	31	190	2.257	1.359	148.4	13.2	1.9E4
17	1909	12	16.742	LICK	CR	32	110	2.243	1.357	146.4	14.1	1.9E4
18	1909	12	31.479	HARVARD	MA12	MA959	160	2.043	1.400	116.9	25.4	4.9E4
19	1910	1	6.754	LOWELL	R40	P7-08	10	1.955	1.450	105.3	29.0	1.9E4
20	1910	1	6.791	LOWELL	R40	P7-09	30	1.955	1.450	105.3	29.0	1.9E4
21	1910	1	7.742	LICK	R24	R-2274	50	1.942	1.459	103.6	29.5	2.1E4
22	1910	1	8.594	YERKES	R24	R-2274	60	1.930	1.467	102.1	29.9	1.8E4
23	1910	1	12.727	LOWELL	R40	P7-14	50	1.871	1.508	95.0	31.6	2.0E4
24	1910	1	14.627	YERKES	R24	R-2275	95	1.844	1.527	91.9	32.2	1.9E4
25	1910	1	29.691	LICK	W6	36	70	1.625	1.688	69.2	34.5	1.6E5
26	1910	1	29.700	LOWELL	R40	P7-17	18	1.625	1.689	69.2	34.5	2.3E4
27	1910	1	30.667	LOWELL	R40	P7-18	45	1.611	1.698	67.9	34.5	2.3E4
28	1910	1	31.712	LOWELL	R40	P7-19	40	1.595	1.709	66.4	34.4	3.8E4
29	1910	2	2.223	HELWAN	R30	185	24	1.539	1.724	64.4	34.4	3.8E4
30	1910	2	4.510	HARVARD	MA12	MA995	52	1.536	1.748	61.3	34.2	6.1E4
31	1910	2	4.694	LICK	CR	41(2)	110	1.536	1.748	61.1	34.2	2.5E4
32	1910	2	5.222#	HELWAN	R30	186	30	1.528	1.753	60.4	34.1	3.8E4
33	1910	2	5.689	LICK	CR	43	90	1.521	1.757	59.7	34.1	2.5E4
34	1910	2	8.491	HARVARD	MC16	MC225	43	1.479	1.782	56.1	33.6	3.2E4
35	1910	2	8.638	LOWELL	R40	P7-222	90	1.477	1.783	55.9	33.6	2.4E4
36	1910	2	10.569	YERKES	B6	C-268	110	1.448	1.799	53.4	33.2	1.7E5
37	1910	2	10.222#	HELWAN	R30	188	30	1.453	1.799	53.9	33.3	3.9E4
38	1910	2	10.685	LICK	CR	45(2)	122	1.446	1.800	53.3	33.2	2.5E4
39	1910	2	11.665	LICK	CR	48	76	1.431	1.808	52.0	32.9	2.6E4
40	1910	2	27.222#	HELWAN	R30	190	12	1.192	1.891	33.2	27.0	4.1E4
41	1910	2	28.222#	HELWAN	R30	192	20	1.177	1.893	32.0	26.5	4.1E4
42	1910	2	28.624	LOWELL	R40	P7-29	21	1.170	1.894	31.5	26.3	2.5E4
43	1910	2	28.690	LICK	CR	51	65	1.169	1.894	31.5	26.2	2.7E4
44	1910	3	1.222#	HELWAN	R30	193	30	1.161	1.895	30.8	25.9	4.1E4
45	1910	3	1.650	LICK	CR	53	43	1.155	1.896	30.3	25.7	2.7E4
46	1910	3	2.221	HELWAN	R30	194	25	1.146	1.896	29.7	25.4	4.1E4
47	1910	3	4.222#	HELWAN	R30	195	25	1.115	1.898	27.4	24.1	4.1E4
48	1910	3	5.616	LOWELL	R40	P7-34	28	1.093	1.898	25.8	23.2	2.5E4
49	1910	3	7.646	LICK	CR	59	34	1.062	1.896	23.5	21.9	2.7E4
50	1910	3	9.646	LICK	CR	62	33	1.031	1.892	21.2	20.4	2.7E4
51	1910	4	14.135	DIAMONDHEAD	HE	HE-01	6	0.600	1.382	22.8	40.3	1.3E5

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
52	1910	4	15.994	LOWELL	B35	P7-38	25	0.593	1.327	24.9	45.4	1.1E5
53	1910	4	15.014	LICK	CR	68	11	0.596	1.356	23.8	42.7	1.9E4
54	1910	4	16.981	LOWELL	C10	P7-41	20	0.590	1.296	26.0	48.2	3.7E5
55	1910	4	16.985	LOWELL	B35	P7-45	25	0.590	1.296	26.0	48.2	3.1E5
56	1910	4	16.011	LICK	CR	71(2)	24	0.593	1.326	24.9	45.5	1.9E4
57	1910	4	17.980	LOWELL	C10	P7-49	24	0.588	1.264	27.1	51.0	3.6E5
58	1910	4	17.981	LOWELL	B35	P7-46	36	0.588	1.264	27.1	51.0	3.1E5
59	1910	4	17.989	LICK	CR	74(2)	27	0.590	1.295	26.0	48.3	1.8E4
60	1910	4	18.006	LICK	WF	79	28	0.588	1.263	27.1	51.1	1.4E5
61	1910	4	18.976	LOWELL	C10	P7-56	26	0.587	1.232	28.2	53.9	3.5E5
62	1910	4	18.977	LOWELL	B35	P7-53	36	0.587	1.232	28.2	53.9	3.1E5
63	1910	4	18.006	LICK	CR	77(2)	28	0.588	1.263	27.1	51.1	1.8E4
64	1910	4	18.322	MELBOURNE	MA	C7/91	20	0.588	1.253	27.5	52.0	2.7E4
65	1910	4	18.577	# HELWAN	R30	216(2)	6	0.588	1.245	27.7	52.7	2.7E4
66	1910	4	19.975	LOWELL	B35	P7-59	33	0.587	1.198	29.3	56.8	1.0E5
67	1910	4	19.016	LICK	CR	81(2)	65	0.587	1.230	28.2	54.0	1.7E4
68	1910	4	19.577	# HELWAN	R30	218(2)	10	0.587	1.212	28.8	55.6	2.6E4
69	1910	4	19.897	CORDOBA	AG	2456	30	0.587	1.201	29.2	56.5	2.6E4
70	1910	4	20.002	LICK	WF	86	35	0.587	1.198	29.3	56.8	1.5E5
71	1910	4	20.436	KODAIKANAL	I9.25	7	24	0.587	1.183	29.7	58.1	4.7E4
72	1910	4	20.973	LOWELL	C10	P7-69	27	0.588	1.164	30.3	59.7	3.3E5
73	1910	4	20.918	LICK	CR	84(2)	25	0.587	1.167	29.3	56.9	1.3E5
74	1910	4	21.005	LICK	WF	88	30	0.588	1.163	30.3	59.8	1.3E5
75	1910	4	21.480	KODAIKANAL	I9.25	8M	33	0.589	1.147	30.8	61.2	4.6E4
76	1910	4	21.629	TRANSVAAL	TC	C4/73	45	0.589	1.142	31.0	61.6	7.5E4
77	1910	4	21.906	HARVARD	B8	B41215(3)	30	0.589	1.132	31.3	62.4	7.3E4
78	1910	4	21.907	LICK	S-1(2)	40	0.589	1.132	31.3	62.4	1.1E5	
79	1910	4	21.979	LOWELL	B35	P7-71	28	0.589	1.129	31.4	62.6	9.5E4
80	1910	4	21.311	MELBOURNE	MA	C7/92	54	0.588	1.153	30.7	60.7	2.5E4
81	1910	4	21.577	# HELWAN	R30	220(2)	20	0.589	1.144	30.9	61.4	2.5E4
82	1910	4	22.317	MELBOURNE	R6	C7/93	30	0.590	1.118	31.7	63.6	7.8E4
83	1910	4	22.478	KODAIKANAL	I9.25	9(2)	38	0.590	1.112	31.9	64.1	4.4E4
84	1910	4	22.974	LOWELL	B35	P7-77	24	0.592	1.094	32.4	65.5	9.2E4
85	1910	4	22.577	HELWAN	R30	221	10	0.591	1.108	32.0	64.4	2.4E4
86	1910	4	22.584	HELWAN	R30	222	12	0.591	1.108	32.0	64.4	2.4E4
87	1910	4	23.317	MELBOURNE	R6	C7/94	39	0.593	1.082	32.7	66.5	7.6E4
88	1910	4	23.580	HELWAN	R30	223	6	0.593	1.072	33.0	67.3	2.3E4
89	1910	4	23.585	HELWAN	R30	224(2)	5	0.593	1.072	33.0	67.3	2.3E4
90	1910	4	24.311	MELBOURNE	R6	C7/95	52	0.596	1.046	33.7	69.5	7.3E4
91	1910	4	24.485	KODAIKANAL	I9.25	10(2)	15	0.597	1.040	33.9	70.0	4.1E4
92	1910	4	24.972	LOWELL	B35	P7-88	112	0.599	1.022	34.3	71.4	8.6E4
93	1910	4	24.876	CORDOBA	AG	2460	15	0.598	1.025	34.2	71.1	2.2E4
94	1910	4	24.890	CORDOBA	AG	2461	15	0.598	1.025	34.2	71.2	2.2E4
95	1910	4	25.969	LOWELL	B35	P7-93	15	0.603	0.988	35.2	74.3	8.3E4
96	1910	4	25.877	CORDOBA	AG	2464	15	0.603	0.988	35.2	74.1	2.2E4
97	1910	4	25.890	CORDOBA	AG	2465(2)	15	0.603	0.988	35.2	74.1	2.1E4
98	1910	4	25.903	CORDOBA	AG	2466(2)	15	0.603	0.987	35.2	74.1	2.1E4
99	1910	4	26.978	LOWELL	B35	P7-98	19	0.609	0.947	36.1	77.3	8.0E4
100	1910	4	26.579	HELWAN	R30	225(2)	5	0.606	0.962	35.8	76.1	2.1E4
101	1910	4	26.582	HELWAN	R30	226(2)	3	0.606	0.962	35.8	76.1	2.1E4
102	1910	4	26.587	HELWAN	R30	227(2)	2	0.607	0.962	35.8	76.1	2.1E4

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
103	1910	4	26.594	HELWAN	R30	228(2)	3	0.607	0.961	35.8	76.2	2.1E4
104	1910	4	26.876	CORDOBA	AG	2470	15	0.608	0.951	36.1	77.0	2.1E4
105	1910	4	26.890	CORDOBA	AG	2471(2)	15	0.608	0.950	36.1	77.0	2.1E4
106	1910	4	26.897	CORDOBA	AG	2472A	2	0.608	0.950	36.1	77.0	2.1E4
106	1910	4	26.899	CORDOBA	AG	2472B	3	0.608	0.950	36.1	77.0	2.1E4
107	1910	4	27.106	DIAMONDHEAD	HE	HE-07(2)	20	0.609	0.942	36.2	77.6	8.7E4
108	1910	4	27.123	DIAMONDHEAD	HE	HE-08(3)	25	0.610	0.942	36.3	77.7	8.7E4
109	1910	4	27.570	HELWAN	R30	229(2)	10	0.612	0.925	36.6	79.0	2.0E4
110	1910	4	27.576	HELWAN	R30	231(2)	10	0.612	0.924	36.6	79.0	2.0E4
111	1910	4	27.584	HELWAN	R30	232(2)	15	0.612	0.924	36.7	79.1	2.0E4
112	1910	4	27.588	HELWAN	R30	232(2)	15	0.614	0.913	36.9	79.9	2.0E4
113	1910	4	27.866	CORDOBA	AG	2476	15	0.614	0.913	36.9	79.9	2.0E4
114	1910	4	27.885	CORDOBA	AG	2477(2)	15	0.614	0.912	36.9	80.0	2.0E4
115	1910	4	27.910	CORDOBA	AG	2478A	3	0.614	0.912	36.9	80.0	2.0E4
115	1910	4	27.903	CORDOBA	AG	2478B	4	0.614	0.912	36.9	80.0	2.0E4
116	1910	4	28.122	DIAMONDHEAD	HE	HE-10	26	0.616	0.904	37.1	80.6	8.4E4
117	1910	4	28.136	DIAMONDHEAD	HE	HE-11	9	0.616	0.903	37.1	80.6	8.4E4
118	1910	4	28.471	KODAIKANAL	I9.25	11	36	0.618	0.890	37.4	81.6	3.6E4
119	1910	4	28.472	KODAIKANAL	I1.5	1	51	0.618	0.890	37.4	81.6	2.3E5
120	1910	4	28.622	TRANSVAAL	TC	C6/77	50	0.619	0.884	37.5	82.1	5.8E4
121	1910	4	28.904	LICK	S	S-5	79	0.621	0.874	37.7	82.9	8.9E4
122	1910	4	28.318	MELBOURNE	MA	C7/96	45	0.617	0.896	37.3	81.2	1.9E4
123	1910	4	28.572	HELWAN	R30	235(2)	10	0.619	0.886	37.5	81.9	1.9E4
124	1910	4	28.580	HELWAN	R30	236(3)	10	0.619	0.886	37.5	82.0	1.9E4
125	1910	4	28.591	HELWAN	R30	237(2)	14	0.619	0.886	37.5	82.1	1.9E4
126	1910	4	28.995	LICK	CR	101(3)	30	0.622	0.870	37.8	83.1	1.5E4
127	1910	4	29.107	DIAMONDHEAD	HE	HE-12	18	0.623	0.866	37.9	83.5	8.0E4
128	1910	4	29.122	DIAMONDHEAD	HE	HE-13	18	0.623	0.865	37.9	83.5	8.0E4
129	1910	4	29.133	DIAMONDHEAD	HE	HE-14	8	0.623	0.865	37.9	83.5	8.0E4
130	1910	4	29.310	MELBOURNE	R6	C7/97	48	0.624	0.858	38.0	84.1	6.0E4
131	1910	4	29.467	KODAIKANAL	I9.25	12	15	0.623	0.852	38.2	84.5	3.4E4
132	1910	4	29.894	CORDOBA	PB	P-10	0.628	0.835	38.5	85.7	9.8E4	
133	1910	4	29.899	HARVARD	B8	B41223(3)	30	0.629	0.835	38.5	85.8	5.4E4
134	1910	4	29.904	CORDOBA	PB	P-11	5	0.629	0.835	38.5	85.8	9.8E4
135	1910	4	29.917*	INDIANA	R8	C-189	:	0.629	0.835	38.5	85.8	6.2E4
136	1910	4	29.957	LOWELL	B35	P7-109	26	0.629	0.833	38.5	85.9	7.0E4
137	1910	4	29.910	LICK	CR	102(3)	10	0.622	0.870	37.8	83.2	1.2E4
138	1910	4	29.901	CORDOBA	AG	2482(2)	15	0.629	0.835	38.5	85.8	1.8E4
139	1910	4	29.912	CORDOBA	AG	2483A	2	0.629	0.835	38.5	85.8	1.8E4
140	1910	4	29.916	CORDOBA	HE	HE-15	3	0.629	0.835	38.5	85.8	1.8E4
141	1910	4	30.117	DIAMONDHEAD	HE	HE-16	35	0.630	0.827	38.6	86.4	7.6E4
142	1910	4	30.133	DIAMONDHEAD	HE	HE-17	15	0.630	0.826	38.6	86.4	7.6E4
143	1910	4	30.627	TRANSVAAL	TC	C6/78	40	0.632	0.819	38.8	86.9	5.7E4
144	1910	4	30.883	CORDOBA	PB	P-13	4	0.636	0.797	39.1	88.6	9.3E4
145	1910	4	30.895	CORDOBA	PB	P-14	9	0.637	0.797	39.2	88.6	9.3E4
146	1910	4	30.963	LOWELL	B35	P7-118	43	0.637	0.794	39.2	88.8	6.7E4
147	1910	4	30.963	LOWELL	C8	P7-124	25	0.637	0.794	39.2	88.8	2.9E5
148	1910	4	30.572	HELWAN	R30	240	38	0.634	0.809	38.9	87.7	1.8E4
149	1910	4	30.983	LICK	CR	104	34	0.637	0.793	39.2	88.9	1.1E4
150	1910	5	1.113	DIAMONDHEAD	HE	HE-17	15	0.638	0.788	39.3	89.3	7.3E4

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Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	(A.U.)	r	Δ (A.U.)	θ (°)	α (°)	Scale (km/mm)
151	1910	5	1.471	KODAIKANAL	I1.5	2	53	0.641	0.774	39.5	90.3	2.0E5	
152	1910	5	1.625	TRANSVAAL	TC	C6/7 9	31	0.643	0.768	39.6	90.7	5.0E4	
153	1910	5	1.963	LOWELL	B35	P7-125	43	0.646	0.755	39.8	91.7	6.4E4	
154	1910	5	1.003	LICK	CR	105	20	0.637	0.792	39.2	88.9	1.1E4	
155	1910	5	1.585	HELWAN	R30	241(2)	10	0.642	0.770	39.6	90.6	1.7E4	
156	1910	5	1.882	CORDOBA	AG	2486(2)	15	0.645	0.758	39.8	91.5	1.6E4	
157	1910	5	1.906	CORDOBA	AG	2488A	2	0.645	0.757	39.8	91.6	1.6E4	
158	1910	5	1.901	CORDOBA	AG	2488B	3	0.645	0.757	39.8	91.5	1.6E4	
159	1910	5	1.913	CORDOBA	AG	2489(2)	9	0.645	0.757	39.8	91.6	1.6E4	
160	1910	5	1.919	CORDOBA	AG	2490	2	0.645	0.757	39.8	91.6	1.6E4	
161	1910	5	1.974	LICK	CR	109(3)	35	0.646	0.754	39.8	91.8	1.1E4	
162	1910	5	1.996	LICK	CR	110	23	0.646	0.754	39.8	91.8	1.1E4	
163	1910	5	2.127	DIAMONDHEAD	HE	HE-18	38	0.647	0.749	39.9	92.1	6.9E4	
164	1910	5	2.309	MELBOURNE	R6	C7/99	60	0.649	0.748	39.9	92.2	6.9E4	
165	1910	5	2.461	KODAIKANAL	I5	25	22	0.650	0.735	40.1	93.2	5.2E4	
166	1910	5	2.473	KODAIKANAL	I5(2)	13(2)	38	0.650	0.735	40.1	93.2	2.9E4	
167	1910	5	2.869	CORDOBA	PB	P-17	15	0.654	0.719	40.3	94.3	8.4E4	
168	1910	5	2.894	LICK	S	S-6	36	0.654	0.718	40.3	94.4	7.3E4	
169	1910	5	2.583	HELWAN	R30	242(2)	15	0.651	0.731	40.2	93.5	1.6E4	
170	1910	5	2.874	CORDOBA	AG	2498(2)	30	0.654	0.719	40.3	94.4	1.6E4	
171	1910	5	2.894	CORDOBA	AG	2499A	2	0.654	0.718	40.3	94.4	1.6E4	
172	1910	5	2.899	CORDOBA	AG	2500(2)	10	0.654	0.718	40.3	94.4	1.6E4	
173	1910	5	2.908	CORDOBA	AG	2501	13	0.654	0.718	40.3	94.5	1.6E4	
174	1910	5	3.092	DIAMONDHEAD	HE	HE-20	21	0.656	0.711	40.4	95.0	6.6E4	
175	1910	5	3.110	DIAMONDHEAD	HE	HE-21	20	0.656	0.710	40.4	95.0	6.6E4	
176	1910	5	3.464	KODAIKANAL	I1.5	3	8	0.660	0.696	40.6	96.1	1.8E5	
177	1910	5	3.874	YERKES	B6	C-287	34	0.664	0.680	40.8	97.3	1.6E5	
178	1910	5	3.875	YERKES	B6	C-285	37	0.664	0.680	40.8	97.3	6.5E4	
179	1910	5	3.875	YERKES	X	C-285	38	0.664	0.680	40.8	97.3	8.8E4	
180	1910	5	3.893	CORDOBA	PB	P-21	10	0.664	0.679	40.8	97.3	7.9E4	
181	1910	5	3.951	LOWELL	G14	P7-133	43	0.665	0.677	40.8	97.5	1.4E5	
182	1910	5	3.953	LOWELL	G7	P7-137	39	0.665	0.677	40.8	97.5	2.8E5	
183	1910	5	3.875	CORDOBA	AG	2505(2)	25	0.664	0.680	40.8	97.3	1.5E4	
184	1910	5	3.893	CORDOBA	AG	2506A	2	0.664	0.679	40.8	97.3	1.5E4	
185	1910	5	3.890	CORDOBA	AG	2506B	4	0.664	0.679	40.8	97.4	1.5E4	
186	1910	5	3.913	CORDOBA	AG	2508(2)	15	0.664	0.678	40.8	97.4	1.5E4	
187	1910	5	4.113	DIAMONDHEAD	HE	HE-23	36	0.666	0.670	40.9	98.0	6.2E4	
188	1910	5	4.472	KODAIKANAL	I1.5	4	49	0.670	0.656	41.0	99.0	1.7E5	
189	1910	5	4.623	TRANSVAAL	TC	C6/8 1	30	0.671	0.650	41.0	99.5	4.2E4	
190	1910	5	4.869	CORDOBA	PB	P-23	20	0.674	0.641	41.1	100.2	7.5E4	
191	1910	5	4.892	LICK	S	S-7(2)	78	0.674	0.640	41.1	100.3	6.5E4	
192	1910	5	4.899	YERKES	B6	C-292	13	0.674	0.639	41.1	100.3	6.1E4	
193	1910	5	4.949	LOWELL	T210	P7-142	33	0.675	0.637	41.1	100.4	2.3E5	
194	1910	5	4.951	LOWELL	B35	P7-139	43	0.675	0.637	41.1	100.4	5.4E4	
195	1910	5	4.954	LOWELL	G7	P7-140	46	0.675	0.637	41.1	100.5	2.7E5	
196	1910	5	4.954	LOWELL	G14	P7-141	46	0.675	0.637	41.1	100.5	1.3E5	
197	1910	5	4.973	LOWELL	B35	P7-144(2)	17	0.675	0.636	41.1	100.5	5.4E4	
198	1910	5	4.975	LICK	WS	118(2)	55	0.675	0.636	41.1	100.5	6.1E4	

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
199	1910	5	4.975	LICK	WF	119(2)	55	0.675	0.636	41.1	100.5	7.2E4
200	1910	5	4.975	LICK	L	120	55	0.675	0.636	41.1	100.5	3.7E5
201	1910	5	4.481	KODAIKANAL	I9.25	14(2)	28	0.670	0.656	41.0	99.1	2.6E4
202	1910	5	4.882	CORDOBA	AG	2510(2)	25	0.674	0.640	41.1	100.2	1.4E4
203	1910	5	4.899	CORDOBA	AG	2511A	3	0.674	0.639	41.1	100.3	1.4E4
204	1910	5	4.896	CORDOBA	AG	2511B	10	0.674	0.639	41.1	100.3	1.4E4
205	1910	5	4.907	CORDOBA	AG	2512(2)	3	0.675	0.639	41.1	100.3	1.4E4
206	1910	5	4.914	CORDOBA	CR	116(2)	23	0.675	0.636	41.2	100.6	9.0E3
207	1910	5	4.989	LICK	MWR	63(2!)	8	0.675	0.636	41.2	100.6	5.6E3
208	1910	5	4.990	MOUNT WILSON	HE-T1	32	0.677	0.631	41.2	100.9	1.9E5	
209	1910	5	5.115	DIAMONDHEAD	HE	HE-25	33	0.677	0.631	41.2	100.9	5.8E4
210	1910	5	5.131	DIAMONDHEAD	HE	HE-26	2	0.677	0.630	41.2	101.0	5.8E4
211	1910	5	5.313	MELBOURNE	R6	C7/100	60	0.679	0.623	41.2	101.5	4.4E4
212	1910	5	5.472	KODAIKANAL	I5	26	50	0.680	0.617	41.3	102.0	5.4E4
213	1910	5	5.626	TRANSVAAL	TC	C6/82	30	0.682	0.611	41.3	102.5	4.0E4
214	1910	5	5.836	HARVARD	AC1.5	AC1/1630	30	0.684	0.602	41.3	103.1	1.3E5
215	1910	5	5.865	CORDOBA	PB	P-26(2)	20	0.685	0.601	41.3	103.2	7.0E4
216	1910	5	5.946	LOWELL	T210	P7-149	40	0.686	0.598	41.4	103.4	2.1E5
217	1910	5	5.951	LOWELL	B35	P7-145	58	0.686	0.598	41.4	103.4	5.0E4
218	1910	5	5.951	LOWELL	G14	P7-147	55	0.686	0.598	41.4	103.4	1.3E5
219	1910	5	5.974	LICK	WS	122W(2)	60	0.686	0.597	41.4	103.5	5.7E4
220	1910	5	5.974	LICK	WF	123(2)	60	0.686	0.597	41.4	103.5	6.8E4
221	1910	5	5.974	LICK	L	126	60	0.686	0.597	41.4	103.5	3.5E5
222	1910	5	5.874	CORDOBA	AG	2515(2)	25	0.685	0.600	41.4	103.5	3.1E4
223	1910	5	5.892	CORDOBA	AG	2516A	2	0.685	0.600	41.4	103.5	1.3E4
224	1910	5	5.888	CORDOBA	AG	2516B	3	0.685	0.600	41.4	103.5	1.3E4
225	1910	5	5.899	CORDOBA	AG	2517	10	0.685	0.600	41.4	103.5	1.3E4
226	1910	5	5.908	CORDOBA	AG	2518	13	0.685	0.600	41.4	103.5	1.3E4
227	1910	5	5.961	LICK	CR	121	21	0.686	0.597	41.4	103.5	8.4E3
228	1910	5	5.983	LICK	CR	122C	36	0.686	0.597	41.4	103.5	8.4E3
229	1910	5	5.983	MOUNT WILSON	MWR	66(2!)	4	0.686	0.597	41.4	103.5	5.6E3
230	1910	5	6.113	DIAMONDHEAD	TE	HE-T2	36	0.687	0.591	41.4	103.9	1.8E5
231	1910	5	6.113	DIAMONDHEAD	HE	HE-27	36	0.687	0.591	41.4	103.9	5.5E4
232	1910	5	6.315	MELBOURNE	R6	C7/101	52	0.690	0.584	41.4	104.6	4.1E4
233	1910	5	6.453	KODAIKANAL	I5	27	26	0.691	0.578	41.4	105.0	5.0E4
234	1910	5	6.471	KODAIKANAL	I1.5	5	25	0.691	0.577	41.4	105.0	1.5E5
235	1910	5	6.846	HARVARD	MA12	MA1077	13	0.696	0.563	41.4	106.2	2.0E4
236	1910	5	6.901	LICK	S	S-8(2)	40	0.696	0.561	41.4	106.3	6.6E4
237	1910	5	6.944	LOWELL	T210	P7-152	45	0.697	0.559	41.4	106.5	2.0E5
238	1910	5	6.947	LOWELL	C8	P7-155	52	0.697	0.559	41.4	106.5	2.0E5
239	1910	5	6.949	LOWELL	G14	P7-153	60	0.697	0.559	41.4	106.5	1.2E5
240	1910	5	6.964	LOWELL	B35	P7-158	28	0.697	0.558	41.4	106.6	4.7E4
241	1910	5	6.875	CORDOBA	AG	2520(2)	25	0.696	0.561	41.4	106.3	1.2E4
242	1910	5	6.892	CORDOBA	AG	2521A	2	0.696	0.561	41.4	106.3	1.2E4
243	1910	5	6.890	CORDOBA	AG	2521B	3	0.696	0.561	41.4	106.3	1.2E4
244	1910	5	6.900	CORDOBA	AG	2522	10	0.696	0.560	41.4	106.4	1.2E4
245	1910	5	6.907	CORDOBA	AG	2523	3	0.696	0.560	41.4	106.4	1.2E4
246	1910	5	6.979	LOWELL	R40	P7-160	17	0.697	0.557	41.4	106.6	7.5E3
247	1910	5	6.992	LICK	CR	127	0.697	0.557	41.4	106.6	7.9E3	
			6.993	MOUNT WILSON	MWR	70(2!)	4	0.697	0.557	41.4	106.7	5.6E3

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	(A.U.)	Δ	θ	α ($^{\circ}$)	Scale (km/mm)
248	1910	5	7.118	DIAMONDHEAD	TE	HE-T3	15	0.699	0.552	41.4	107.0	1.6E5
249	1910	5	7.118	DIAMONDHEAD	HE	HE-29	15	0.699	0.552	41.4	107.0	5.1E4
250	1910	5	7.299	DAIREN	S	32	49	0.701	0.545	41.4	107.6	1.7E5
251	1910	5	7.301	DAIREN	D	33	58	0.701	0.545	41.4	107.6	4.6E4
252	1910	5	7.318	MELBOURNE	R6	C7/102	45	0.701	0.544	41.4	107.7	3.8E4
253	1910	5	7.879	LICK	S	S-9(2)	38	0.707	0.522	41.4	109.5	5.3E4
254	1910	5	7.894	HARVARD	B8	B41246(3)	20	0.708	0.521	41.4	109.5	3.4E4
255	1910	5	7.913	LICK	S	S-10(2)	45	0.708	0.521	41.3	109.6	5.3E4
256	1910	5	7.945	LOWELL	T210	P7-161(2)	41	0.708	0.519	41.3	109.7	1.8E5
257	1910	5	7.951	LOWELL	G14	P7-164	51	0.708	0.519	41.3	109.7	1.1E5
258	1910	5	7.961	LOWELL	B35	P7-167	24	0.708	0.519	41.3	109.7	4.4E4
259	1910	5	7.878	CORDOBA	AG	2525	25	0.707	0.522	41.4	109.5	1.1E4
260	1910	5	7.894	CORDOBA	AG	2526A(2)	2	0.708	0.521	41.4	109.5	1.1E4
260	1910	5	7.891	CORDOBA	AG	2526B(2)	3	0.708	0.522	41.4	109.5	1.1E4
261	1910	5	7.903	CORDOBA	AG	2527	10	0.708	0.521	41.4	109.5	1.1E4
262	1910	5	7.967	LOWELL	R40	P7-168A	0.33	0.708	0.519	41.3	109.8	7.0E3
262	1910	5	7.967	LOWELL	R40	P7-168B	1	0.708	0.519	41.3	109.8	7.0E3
262	1910	5	7.970	LOWELL	R40	P7-168C	3	0.709	0.518	41.3	109.8	7.0E3
262	1910	5	7.972	LOWELL	R40	P7-168D	4.50	0.709	0.518	41.3	109.8	7.0E3
263	1910	5	7.972	LICK	CR	129(2)	30	0.709	0.518	41.3	109.8	7.3E3
264	1910	5	7.980	LOWELL	R40	P7-169	2	0.709	0.518	41.3	109.8	7.0E3
265	1910	5	7.989	MOUNT WILSON	MWR	72(2!)	8	0.709	0.518	41.3	109.8	5.6E3
266	1910	5	8.103	DIAMONDHEAD	HE	HE-30	50	0.710	0.513	41.3	110.2	4.7E4
267	1910	5	8.104	DIAMONDHEAD	TE	HE-T4	55	0.710	0.513	41.3	110.2	1.5E5
268	1910	5	8.126	DIAMONDHEAD	HE	HE-31(2)	11	0.710	0.512	41.3	110.3	4.7E4
269	1910	5	8.636	TRANSVAAL	TC	C6/83	15	0.716	0.492	41.2	112.0	3.2E4
270	1910	5	8.859	CORDOBA	PB	P-38	15	0.719	0.484	41.1	112.7	5.6E4
271	1910	5	8.938	LOWELL	B35	P7-175	24	0.720	0.481	41.0	113.0	4.0E4
272	1910	5	8.949	LOWELL	G14	P7-173	57	0.720	0.480	41.0	113.0	2.0E5
273	1910	5	8.949	LOWELL	G7	P7-174	55	0.720	0.480	41.0	113.0	2.0E5
274	1910	5	8.551	HELWAN	R30	244(2)	5	0.715	0.496	41.2	111.7	1.1E4
275	1910	5	8.557	HELWAN	R30	245(2)	5	0.715	0.495	41.2	111.7	1.1E4
276	1910	5	8.565	HELWAN	R30	246(2)	2	0.716	0.495	41.2	111.7	1.1E4
277	1910	5	8.572	HELWAN	R30	247(2)	8	0.716	0.495	41.2	111.7	1.1E4
278	1910	5	8.578	HELWAN	R30	248(2)	0.50	0.716	0.495	41.2	111.8	1.1E4
279	1910	5	8.580	HELWAN	R30	249(2)	0.2	0.716	0.495	41.2	112.8	1.0E4
280	1910	5	8.913	CORDOBA	AG	2530(2)	10	0.720	0.482	41.0	113.1	6.4E3
281	1910	5	8.961	LOWELL	R40	P7-177	9	0.720	0.480	41.0	113.1	5.6E3
282	1910	5	8.970	LOWELL	R40	P7-178A	0.50	0.720	0.479	41.0	113.1	5.6E3
282	1910	5	8.972	LOWELL	R40	P7-178B	1	0.720	0.479	41.0	113.1	6.4E3
283	1910	5	8.973	LOWELL	R40	P7-178C	2	0.720	0.479	41.0	114.2	3.3E4
283	1910	5	8.987	MOUNT WILSON	MWR	73(2!)	3	0.720	0.479	41.0	115.3	3.0E4
284	1910	5	9.117	DIAMONDHEAD	TE	HE-T5	8	0.721	0.474	41.0	113.6	1.4E5
285	1910	5	9.118	HE	HE-32	24	0.722	0.474	41.0	113.6	4.4E4	
286	1910	5	9.297	MELBOURNE	R6	C7/103	16	0.724	0.467	40.9	114.2	4.0E4
287	1910	5	9.606	TRANSVAAL	TC	C6/84	31	0.728	0.455	40.7	115.3	3.0E4
288	1910	5	9.631	TRANSVAAL	TC	C6/85	31	0.729	0.454	40.7	115.4	3.0E4
289	1910	5	9.970	LICK	WS	133W(2)	60	0.733	0.440	40.4	116.6	4.2E4
290	1910	5	9.970	LICK	WF	134(2)	60	0.733	0.440	40.4	116.6	2.1E5
291	1910	5	9.970	LICK	Z	136	60	0.733	0.440	40.4	116.6	2.1E5

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
292	1910	5	9.554	HELWAN	R30	250	1	0.728	0.457	40.7	115.1	9.9E3
293	1910	5	9.560	HELWAN	R30	251(2)	8	0.728	0.456	40.7	115.1	9.9E3
294	1910	5	9.568	HELWAN	R30	252(2)	0.50	0.728	0.456	40.7	115.2	9.9E3
295	1910	5	9.576	HELWAN	R30	254(2)	8	0.728	0.456	40.7	115.2	9.9E3
296	1910	5	9.581	HELWAN	R30	255(2)	0.50	0.728	0.456	40.7	115.2	9.9E3
297	1910	5	9.976	LICK	CR	133C	43	0.733	0.440	40.4	116.6	6.2E3
298	1910	5	9.994	MOUNT WILSON	MWR	77(2!)	2	0.733	0.440	40.4	116.7	5.6E3
299	1910	5	10.110	DIAMONDHEAD	TE	HE-T6	41	0.734	0.435	40.3	117.1	8.9E4
300	1910	5	10.110	DIAMONDHEAD	HE	HE-33	41	0.734	0.435	40.3	117.1	4.0E4
301	1910	5	10.607	TRANSVAAL	TC	C6/86	30	0.741	0.416	39.9	119.0	2.7E4
302	1910	5	10.887	INDIANA	R8	C-191	30	0.744	0.405	39.6	120.1	3.0E4
303	1910	5	10.947	LOWELL	T210	P7-181	43	0.745	0.403	39.5	120.3	1.4E5
304	1910	5	10.948	LOWELL	G14	P7-180	49	0.745	0.403	39.5	120.3	8.5E4
305	1910	5	10.948	LOWELL	C10	P7-182	46	0.745	0.403	39.5	120.3	1.1E5
306	1910	5	10.963	LOWELL	B35	P7-185	23	0.745	0.402	39.5	120.4	3.4E4
307	1910	5	10.970	LICK	WS	143(2)	60	0.745	0.402	39.5	120.4	3.8E4
308	1910	5	10.970	LICK	WF	144(2)	60	0.745	0.402	39.5	120.4	4.6E4
309	1910	5	10.970	LICK	L	145	1	0.745	0.402	39.5	120.4	2.4E5
310	1910	5	10.970	LICK	Z	146	60	0.745	0.402	39.5	120.4	1.9E5
311	1910	5	10.300	DAIREN	D	42	2	0.740	0.428	40.2	117.8	9.1E4
312	1910	5	10.557	HELWAN	R30	256(2)	2	0.740	0.418	39.9	118.8	9.1E3
313	1910	5	10.565	HELWAN	R30	257(2)	10	0.740	0.418	39.9	118.8	9.1E3
314	1910	5	10.571	HELWAN	R30	258	1	0.740	0.417	39.9	118.9	9.1E3
315	1910	5	10.576	HELWAN	R30	259(2)	7	0.740	0.417	39.9	118.9	9.1E3
316	1910	5	10.581	HELWAN	R30	260(2)	0.50	0.740	0.417	39.9	118.9	9.1E3
317	1910	5	10.970	LOWELL	R40	P7-187A	0.16	0.745	0.402	39.5	120.4	5.4E3
317	1910	5	10.970	LOWELL	R40	P7-187B	0.50	0.745	0.402	39.5	120.4	5.4E3
317	1910	5	10.971	LOWELL	R40	P7-187C	1	0.745	0.402	39.5	120.4	5.4E3
317	1910	5	10.972	LOWELL	R40	P7-187D	2	0.745	0.402	39.5	120.4	5.4E3
317	1910	5	10.974	LOWELL	R40	P7-187E	3	0.745	0.402	39.5	120.4	5.4E3
318	1910	5	10.975	LICK	CR	139(3)	41	0.745	0.402	39.5	120.4	5.7E3
319	1910	5	10.993	MOUNT WILSON	MWR	80(2!)	2	0.746	0.401	39.5	120.5	5.6E3
320	1910	5	10.994	LICK	CR	140(3)	9	0.746	0.401	39.5	120.5	5.7E3
321	1910	5	10.999	LICK	CR	141(2)	3	0.746	0.401	39.5	120.5	5.7E3
322	1910	5	11.618	TRANSVAAL	TC	C6/87	33	0.754	0.378	38.7	123.1	2.5E4
323	1910	5	11.862	CORDOBA	PB	P-42	35	0.757	0.368	38.3	124.1	4.3E4
324	1910	5	11.870	CORDOBA	PB	P-43	10	0.757	0.368	38.3	124.1	4.3E4
325	1910	5	11.886	CORDOBA	PB	P-44(3)	30	0.757	0.367	38.3	124.2	4.3E4
326	1910	5	11.894	LICK	S	S-11(2)	46	0.757	0.367	38.3	124.2	3.7E4
327	1910	5	11.903	CORDOBA	PB	P-45(2)	10	0.757	0.367	38.3	124.3	4.3E4
328	1910	5	11.956	LOWELL	C8	P7-193	32	0.758	0.365	38.2	124.5	1.3E5
329	1910	5	11.957	LOWELL	B35	P7-192	39	0.758	0.365	38.2	124.5	3.1E4
330	1910	5	11.976	LICK	W6	151(2)	39	0.758	0.364	38.2	124.6	4.1E4
331	1910	5	11.976	LICK	WF	152(2)	39	0.758	0.364	38.2	124.6	1.8E5
332	1910	5	11.976	LICK	Z	154(2)	39	0.758	0.364	38.2	124.6	1.8E5
333	1910	5	11.001	LICK	CR	142(3)	31	0.746	0.401	39.5	120.5	5.7E3
334	1910	5	11.578	HELWAN	R30	261(2)	3	0.753	0.379	38.8	122.9	8.2E3
335	1910	5	11.867	CORDOBA	AG	2531	10	0.757	0.368	38.3	124.1	8.0E3
336	1910	5	11.890	CORDOBA	AG	2533A	12	0.757	0.367	38.3	124.2	8.0E3
336	1910	5	11.885	CORDOBA	AG	2533B	3	0.757	0.367	38.3	124.2	8.0E3
337	1910	5	11.903	CORDOBA	AG	2534(2)	26	0.757	0.367	38.3	124.3	8.0E3

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Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ (°)	α (°)	Scale (km/mm)
338	1910	5	11.976	LICK	CR	147(2)	39	0.758	0.364	38.2	124.6	5.1E3
339	1910	5	11.994	LICK	CR	148(2)	7	0.759	0.363	38.1	124.7	5.1E3
340	1910	5	11.998	DIAMONDHEAD	HE	HE-35	2	0.759	0.363	38.0	124.7	5.1E3
341	1910	5	12.090	DIAMONDHEAD	TE	HE-T7	20	0.760	0.360	38.0	125.1	3.3E4
342	1910	5	12.104	DIAMONDHEAD	HE	HE-36	59	0.760	0.359	37.9	125.2	7.6E4
343	1910	5	12.112	DIAMONDHEAD	HE	HE-37	37	0.760	0.359	37.9	125.2	3.3E4
344	1910	5	12.127	DIAMONDHEAD	HE	HE-37	6	0.760	0.358	37.9	125.3	3.3E4
345	1910	5	12.475	KODAIKANAL	I9.25	15(2)	28	0.765	0.345	37.3	126.9	1.4E4
346	1910	5	12.475	KODAIKANAL	I5	28(2)	27	0.765	0.345	37.3	126.9	3.0E4
347	1910	5	12.619	TRANSVAAL	TC	C6-8	49	0.767	0.340	37.0	127.5	2.2E4
348	1910	5	12.863	CORDOBA	PB	P-48	30	0.770	0.331	36.5	128.7	7.7E4
349	1910	5	12.888	CORDOBA	PB	P-49(3)	30	0.770	0.330	36.4	128.8	3.9E4
350	1910	5	12.905	CORDOBA	PB	P-50(2)	10	0.770	0.330	36.4	128.9	3.8E4
351	1910	5	12.970	LICK	WS	157	45	0.771	0.327	36.2	129.2	3.1E4
352	1910	5	12.970	LICK	WF	WF	45	0.771	0.327	36.2	129.2	7.7E4
353	1910	5	12.000	LICK	CR	150	0.50	0.759	0.363	38.1	124.7	5.1E3
354	1910	5	12.868	CORDOBA	AG	2535	10	0.770	0.331	36.5	128.7	7.2E3
355	1910	5	12.890	CORDOBA	AG	2537A	12	0.770	0.330	36.4	128.9	7.2E3
355	1910	5	12.887	CORDOBA	AG	2537B	3	0.770	0.330	36.4	128.8	7.2E3
356	1910	5	12.902	CORDOBA	AG	2538(2)	25	0.770	0.330	36.4	128.9	7.2E3
357	1910	5	12.967	LICK	CR	155	16	0.771	0.327	36.2	129.2	9.3E3
358	1910	5	12.982	LICK	CR	156(2)	13	0.772	0.327	36.2	129.3	4.6E3
359	1910	5	13.105	DIAMONDHEAD	TE	HE-T8	48	0.773	0.322	35.9	129.9	9.6E4
360	1910	5	13.108	DIAMONDHEAD	HE	HE-38	40	0.773	0.322	35.9	129.9	3.0E4
361	1910	5	13.338	MELBOURNE	R6	C7/104	15	0.776	0.314	35.3	131.1	2.2E4
362	1910	5	13.631	TRANSVAAL	TC	C6/89	40	0.780	0.303	34.6	132.7	2.0E4
363	1910	5	13.984	CORDOBA	PB	P-53	30	0.783	0.295	33.9	134.0	6.9E4
364	1910	5	13.888	CORDOBA	PB	P-54(3)	30	0.784	0.294	33.8	134.1	3.4E4
365	1910	5	13.904	CORDOBA	PB	P-55(2)	10	0.784	0.294	33.8	134.2	3.4E4
366	1910	5	13.946	LOWELL	C8	P7-199	29	0.784	0.292	33.6	134.5	1.1E5
367	1910	5	13.864	CORDOBA	PB	P7-198	37	0.784	0.292	33.6	134.5	1.1E5
368	1910	5	13.888	CORDOBA	PB	B35	39	0.785	0.294	33.5	134.7	2.8E4
369	1910	5	13.975	LICK	WS	166(2)	43	0.785	0.294	33.8	134.1	3.2E3
370	1910	5	13.881	CORDOBA	AG	2539A	1	0.784	0.295	33.8	134.1	3.2E3
370	1910	5	13.879	CORDOBA	AG	2539B	2	0.784	0.294	33.7	134.3	6.4E3
371	1910	5	13.905	LOWELL	C10	P7-201(2)	32	0.784	0.294	33.5	134.7	4.1E3
372	1910	5	13.956	LOWELL	R40	P7-204	35	0.785	0.291	33.5	134.7	4.1E3
373	1910	5	13.975	LICK	CR	160(2)	35	0.785	0.291	33.5	134.8	4.1E3
374	1910	5	13.994	LICK	CR	161(3)	6	0.785	0.291	33.5	134.8	4.1E3
375	1910	5	13.997	LICK	CR	163(2)	0.25	0.785	0.290	33.5	134.8	4.1E3
376	1910	5	13.999	LICK	CR	162(2)	1	0.785	0.290	33.5	134.8	4.1E3
377	1910	5	14.330	MELBOURNE	R6	C7/105	17	0.790	0.257	29.8	141.0	2.0E4
378	1910	5	14.460	KODAIKANAL	I5	29(2)	28	0.791	0.274	31.9	137.6	2.4E4
379	1910	5	14.469	KODAIKANAL	I0.45	6	60	0.792	0.274	31.9	137.6	1.6E5
380	1910	5	14.964	LOWELL	B35	P7-210(2)	12	0.798	0.257	29.8	140.9	2.2E4
381	1910	5	14.978	LICK	WS	173(2)	30	0.798	0.257	29.8	141.0	2.5E4
382	1910	5	14.004	LICK	CR	164	2	0.785	0.290	33.4	134.8	4.1E3
383	1910	5	14.005	LICK	CR	165	0.50	0.785	0.290	33.4	134.8	4.1E3
384	1910	5	14.574	HELWAN	R30	262(2)	6	0.793	0.270	31.4	138.3	5.9E3
385	1910	5	14.581	HELWAN	CR	169	0.50	0.793	0.270	31.4	138.4	5.9E3
386	1910	5	14.980	LICK	CR	169	25	0.799	0.257	29.8	141.0	3.6E3

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ (°)	α (°)	Scale (km/mm)
387	1910	5	15.114	DIAMONDHEAD	TE	HE-T9	25	0.800	0.252	29.2	142.0	7.5E4
388	1910	5	15.115	DIAMONDHEAD	HE	HE-39	28	0.800	0.252	29.2	142.0	2.3E4
389	1910	5	15.128	DIAMONDHEAD	HE	HE-40	27	0.801	0.241	29.1	142.1	2.3E4
390	1910	5	15.477	KODAIKANAL	I5	30(2)	22	0.805	0.225	27.4	144.7	2.1E4
391	1910	5	15.988	LICK	CR	176(2)	27	0.812	0.224	24.6	148.8	3.2E3
392	1910	5	15.993	LICK	CR	177	4	0.813	0.224	24.5	148.9	3.2E3
393	1910	5	15.996	LICK	CR	182	1	0.813	0.224	24.5	148.9	3.5E3
394	1910	5	16.476	KODAIKANAL	I5	31	24	0.819	0.210	21.4	153.3	1.8E4
395	1910	5	16.641	TRANSVAAL	TC	C6/90	12	0.822	0.206	20.2	154.8	1.3E4
396	1910	5	20.757	DIAMONDHEAD	HE	HE-42	4	0.881	0.155	29.3	145.8	1.4E4
397	1910	5	20.678	LICK	CR	186(2)	6	0.880	0.154	28.2	147.1	2.2E3
398	1910	5	21.017	DAIREN	S	53	30	0.885	0.157	32.8	141.7	2.5E4
399	1910	5	21.461	LICK	S	S-12(2)	20	0.891	0.163	38.6	134.9	1.7E4
400	1910	5	21.771	DIAMONDHEAD	HE	HE-43	40	0.896	0.168	42.3	130.5	1.5E4
401	1910	5	21.797	DIAMONDHEAD	HE	HE-44	30	0.896	0.168	42.6	130.1	1.6E4
402	1910	5	21.019	DAIREN	D	54	38	0.885	0.157	32.8	141.6	1.7E3
403	1910	5	21.235	HELWAN	R30	270(2)	1	0.888	0.159	35.7	138.3	3.5E3
404	1910	5	21.241	HELWAN	R30	271(2)	1	0.888	0.160	35.8	138.2	3.5E3
405	1910	5	21.251	HELWAN	R30	272(2)	5	0.888	0.160	35.9	138.0	3.5E3
406	1910	5	21.258	HELWAN	R30	273(2)	2	0.888	0.160	36.0	137.9	3.5E3
407	1910	5	21.265	HELWAN	R30	274(2)	2	0.888	0.160	36.1	137.8	3.5E3
408	1910	5	21.454	CORDOBA	AG	P2542	10	0.891	0.162	38.5	135.0	3.5E3
409	1910	5	21.651	LOWELL	R40	P7-234A	0.16	0.894	0.166	40.9	132.2	2.2E3
409	1910	5	21.652	LOWELL	R40	P7-234B	0.50	0.894	0.166	40.9	132.2	2.2E3
409	1910	5	21.652	LOWELL	R40	P7-234C	0.50	0.894	0.166	40.9	132.2	2.2E3
410	1910	5	21.653	LOWELL	R40	P7-234D	2	0.894	0.166	40.9	132.1	2.2E3
411	1910	5	21.682	LICK	CR	190	15*	0.894	0.166	41.2	131.7	2.3E3
412	1910	5	21.709	LICK	CR	191	18	0.895	0.166	41.6	131.3	2.4E3
413	1910	5	22.437	CORDOBA	PB	P-68	5	0.906	0.181	49.4	121.8	2.1E4
414	1910	5	22.245	HELWAN	R30	275(2)	50	0.903	0.177	47.5	124.2	3.8E3
415	1910	5	22.247	HELWAN	R30	276(2)	1	0.903	0.177	47.5	124.2	3.8E3
416	1910	5	22.260	HELWAN	R30	278(2)	3	0.903	0.177	47.7	124.0	3.8E3
417	1910	5	22.281	HELWAN	R30	281	1	0.903	0.177	47.9	123.8	3.9E3
418	1910	5	22.487	CORDOBA	AG	2545(2)	15	0.906	0.182	49.9	121.2	4.0E3
419	1910	5	22.670	LOWELL	R40	P7-248A	0.33	0.909	0.186	51.7	119.1	2.5E3
419	1910	5	22.671	LOWELL	R40	P7-248B	0.66	0.909	0.186	51.7	119.1	2.5E3
419	1910	5	22.672	LOWELL	R40	P7-248C	1.30	0.909	0.186	51.7	119.1	2.5E3
419	1910	5	22.673	LOWELL	R40	P7-248D	2	0.909	0.186	51.7	119.1	2.5E3
420	1910	5	22.675	LOWELL	R40	P7-248E	5	0.909	0.186	51.7	119.0	2.5E3
421	1910	5	22.678	LICK	CR	192(2)	5	0.909	0.186	51.8	118.9	2.6E3
422	1910	5	22.681	LICK	CR	193	1	0.909	0.186	51.8	118.9	2.6E3
423	1910	5	22.686	LOWELL	R40	P7-249	12	0.909	0.186	51.8	118.8	2.6E3
424	1910	5	22.697	LICK	CR	194(2)	50	0.909	0.187	51.9	118.8	2.7E3
425	1910	5	22.733	LICK	CR	195	20	0.910	0.188	52.2	118.4	2.7E3
426	1910	5	22.745	KODAIKANAL	I5	32	0.910	0.198	52.3	118.3	2.7E3	
427	1910	5	23.098	KODAIKANAL	PB	P-72	32	0.915	0.197	55.4	114.4	1.7E4
428	1910	5	23.440	CORDOBA	B35	P7-251	32	0.920	0.206	58.0	111.1	2.4E4
429	1910	5	23.726	LICK	WF	P7-257	60	0.925	0.214	60.0	108.4	2.4E4
430	1910	5	23.727	LOWELL	B35	P7-257	53	0.925	0.214	60.0	108.4	1.8E4
431	1910	5	23.776	DIAMONDHEAD	HE	HE-45(2)	45	0.926	0.215	60.4	108.0	2.0E4

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Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r' (A.U.)	θ (°)	α (°)	Scale (km/mm)
432	1910	5	23.264	HELWAN	R30	283(2)	0.75	0.918	0.201	56.7	112.8
433	1910	5	23.270	HELWAN	R30	284(2)	2.50	0.918	0.201	56.7	112.7
434	1910	5	23.276	CORDOBA	AG	2546A(2)	3	0.918	0.201	56.8	112.6
435	1910	5	23.442	CORDOBA	AG	2546B(2)	2	0.921	0.206	58.0	111.0
435	1910	5	23.444	CORDOBA	AG	2548	2	0.921	0.206	58.0	111.0
436	1910	5	23.474	CORDOBA	AG	2549	30	0.921	0.207	58.3	110.7
437	1910	5	23.505	CORDOBA	AG	199(2)	52	0.921	0.208	58.5	110.4
438	1910	5	23.678	LICK	CR	200	0.50	0.924	0.213	59.7	108.8
439	1910	5	23.680	LICK	CR	201(2)	1	0.924	0.213	59.7	108.8
440	1910	5	23.684	LICK	CR	202(2)	8	0.924	0.213	59.7	108.8
441	1910	5	23.694	LICK	CR	203(2)	18	0.924	0.213	59.8	108.7
442	1910	5	23.726	LICK	CR	204	60	0.925	0.214	60.0	108.4
443	1910	5	23.760	LICK	CR	205	0.17	0.925	0.215	60.3	108.1
444	1910	5	23.762	KODAIKANAL	T5	P-81	2	0.925	0.215	62.6	104.9
445	1910	5	24.138	CORDOBA	PB	P-82	10	0.936	0.236	64.4	102.5
446	1910	5	24.454	CORDOBA	PB	I36713	10	0.937	0.236	65.0	101.6
447	1910	5	24.461	HARVARD	AG	2553(2)	30	0.936	0.235	64.4	102.5
448	1910	5	24.570	CORDOBA	AG	2554A	2	0.936	0.237	64.7	102.1
449	1910	5	24.446	CORDOBA	AG	2554B	3	0.936	0.236	64.4	102.4
450	1910	5	24.501	CORDOBA	AG	2556(3)	30	0.936	0.237	64.6	102.2
450	1910	5	24.461	CORDOBA	AG	2557	5	0.937	0.237	64.7	102.1
451	1910	5	24.489	CORDOBA	AG	MC406	10	0.937	0.239	65.0	101.7
452	1910	5	24.504	CORDOBA	AG	P7-259A	0.33	0.936	0.239	65.4	101.0
453	1910	5	24.562	HARVARD	MC16	P7-259B	5	0.937	0.239	65.4	101.0
454	1910	5	24.651	LOWELL	R40	P7-259C	2	0.939	0.242	65.4	101.0
454	1910	5	24.654	LOWELL	R40	P7-259D	15	0.939	0.242	65.5	100.9
455	1910	5	24.667	LOWELL	R40	P7-260	15	0.939	0.242	67.6	97.8
455	1910	5	24.648	LOWELL	R40	15	0.946	0.242	65.4	101.0	
455	1910	5	24.651	LOWELL	R40	20	0.946	0.242	65.4	101.0	
456	1910	5	24.651	LOWELL	R40	P-84(3)	8	0.951	0.268	69.0	95.7
456	1910	5	24.654	LOWELL	R40	P-85(2)	5	0.951	0.269	69.2	95.5
457	1910	5	25.117	KODAIKANAL	T5	P-87	22	0.953	0.273	69.6	94.8
458	1910	5	25.443	CORDOBA	PB	P-84(3)	45	0.953	0.273	69.6	94.8
459	1910	5	25.456	CORDOBA	PB	P-85(2)	45	0.953	0.273	69.6	94.8
460	1910	5	25.492	CORDOBA	PB	P-87	60	0.953	0.274	69.7	94.7
461	1910	5	25.610	YERKES	G	C-324	41	0.954	0.275	69.8	94.6
462	1910	5	25.619	YERKES	B6	C-325	47	0.954	0.275	69.8	94.5
463	1910	5	25.619	YERKES	B10	C-325(2)	11*	0.954	0.275	69.8	94.5
464	1910	5	25.625	INDIANA	R8	C-193	60	0.954	0.275	69.8	94.5
465	1910	5	25.653	YERKES	B6	C-327(2)	41	0.954	0.276	69.8	94.3
466	1910	5	25.653	YERKES	B10	C-327(2)	41	0.954	0.276	69.8	94.3
467	1910	5	25.655	YERKES	X	C-327	47	0.954	0.279	70.3	93.8
468	1910	5	25.660	LOWELL	G7	HE-48	10	0.956	0.280	70.3	93.7
469	1910	5	25.666	LOWELL	C10	P7-264	11*	0.954	0.286	70.9	92.7
470	1910	5	25.706	LICK	NS	P7-266	30	0.955	0.286	68.2	97.0
471	1910	5	25.788	DIAMONDHEAD	HE	HE-49	23	0.956	0.286	68.2	97.0
472	1910	5	25.803	DIAMONDHEAD	HE	TOKYO	79	0.959	0.286	68.2	97.0
473	1910	5	25.976	HELWAN	R30	287(3)	10	0.948	0.261	68.2	97.0
474	1910	5	25.248	HELWAN	R30	288(3)	5	0.948	0.261	68.2	97.0
475	1910	5	25.255	HELWAN	R30	289(4)	2	0.948	0.262	68.3	96.9
476	1910	5	25.262	HELWAN	R30	290(4)	5	0.948	0.262	68.3	96.9
477	1910	5	25.269	HELWAN	EF	18	25	0.949	0.265	68.7	96.3
478	1910	5	25.369	CATANIA							5.8E3

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ (°)	α (°)	Scale (km/mm)
479	1910	5	25.447	CORDOBA	AG	2558(2)	33	0.951	0.268	69.0	95.8	5.8E3
480	1910	5	25.467	CORDOBA	AB	2559A(2)	2	0.951	0.268	69.1	95.7	5.8E3
480	1910	5	25.463	CORDOBA	AG	2559B(2)	3	0.951	0.268	69.0	95.7	5.8E3
480	1910	5	25.463	CORDOBA	AG	2561(3)	30	0.951	0.269	69.2	95.5	5.9E3
481	1910	5	25.492	CORDOBA	AG	2562	0.30	0.952	0.270	69.4	95.4	5.9E3
482	1910	5	25.506	CORDOBA	R40	P7-268A	0.30	0.954	0.275	69.8	94.5	3.7E3
483	1910	5	25.666	LOWELL	R40	P7-268B	0.1	0.954	0.275	69.8	94.5	3.7E3
483	1910	5	25.667	LOWELL	R40	P7-268C	0.50	0.954	0.275	69.8	94.5	3.7E3
483	1910	5	25.669	LOWELL	CR	210(2)	0.1	0.954	0.276	69.9	94.4	3.9E3
484	1910	5	25.684	LICK	R40	P7-269(2)	30	0.954	0.276	69.9	94.4	3.7E3
485	1910	5	25.684	LOWELL	CR	211	10	0.954	0.276	69.9	94.4	3.9E3
486	1910	5	25.693	LICK	R40	P7-270A	0.16	0.954	0.276	70.0	94.3	3.7E3
487	1910	5	25.704	LOWELL	R40	P7-270B	0.30	0.955	0.276	70.0	94.3	3.7E3
487	1910	5	25.705	LOWELL	R40	P7-270C	0.50	0.955	0.276	70.0	94.3	3.7E3
487	1910	5	25.706	LOWELL	R40	P7-270D	1	0.955	0.276	70.0	94.2	3.7E3
488	1910	5	25.707	LOWELL	CR	212	30	0.955	0.276	70.0	94.3	3.9E3
489	1910	5	25.705	LICK	CR	213(2)	10	0.955	0.277	70.0	94.2	3.9E3
490	1910	5	25.720	LICK	CR	214	10	0.955	0.278	70.1	94.0	3.9E3
491	1910	5	25.743	LICK	CR	215(2)	2	0.955	0.278	70.1	94.0	3.9E3
492	1910	5	25.749	LICK	CR	216	80	0.959	0.286	71.0	92.7	1.8E4
493	1910	5	25.990	TOKYO	B	83	75	0.960	0.288	71.1	92.4	1.5E5
494	1910	5	26.043	DAIREN	S	84	84	0.960	0.288	71.1	92.4	2.2E4
495	1910	5	26.047	DAIREN	D	85	95	0.960	0.288	71.1	92.4	2.5E4
496	1910	5	26.050	DAIREN	PB	P-88(2)	50	0.966	0.302	72.4	90.3	3.5E4
497	1910	5	26.450	CORDOBA	PB	P-89(2)	8	0.966	0.303	72.4	89.9	3.6E4
498	1910	5	26.474	CORDOBA	PB	P-91	5	0.967	0.305	72.6	89.7	1.8E4
499	1910	5	26.533	CORDOBA	T8	136716	24	0.968	0.306	72.7	89.6	6.7E4
500	1910	5	26.577	HARVARD	AC1.5	AC11679	90	0.968	0.307	72.8	89.6	6.7E4
501	1910	5	26.588	HARVARD	T8	136717	30	0.968	0.307	72.8	89.4	1.8E4
502	1910	5	26.597	HARVARD	G	C-330	27	0.968	0.308	72.8	89.5	3.9E4
503	1910	5	26.614	YERKES	X	C-331	52	0.968	0.308	72.9	89.4	3.0E4
504	1910	5	26.623	YERKES	G	C-331	51	0.968	0.308	72.9	89.4	3.0E4
505	1910	5	26.624	YERKES	B6	C-331(2)	49	0.968	0.308	72.9	89.4	3.0E4
506	1910	5	26.631	INDIANA	B10	C-194	77	0.969	0.308	72.9	89.4	2.3E4
507	1910	5	26.634	YERKES	G	C-332	20	0.969	0.308	73.0	89.3	7.6E4
508	1910	5	26.623	YERKES	G	C-334	31	0.969	0.309	73.0	89.2	3.0E4
509	1910	5	26.624	YERKES	B6	C-335	57	0.969	0.310	73.0	89.2	3.1E4
510	1910	5	26.667	YERKES	B10	C-335	57	0.969	0.310	73.0	89.2	3.1E4
511	1910	5	26.667	YERKES	X	C-335	57	0.969	0.310	73.0	89.2	3.1E4
512	1910	5	26.698	LOWELL	BS5	P7-272	100	0.970	0.311	73.1	89.1	2.6E4
513	1910	5	26.712	LICK	WS	225(2)	32	0.970	0.311	73.1	89.0	3.0E4
514	1910	5	26.715	LOWELL	C10	P7-277	82	0.970	0.312	73.1	89.0	8.8E4
515	1910	5	26.726	LICK	WF	227(2)	82	0.970	0.312	73.1	89.0	3.5E4
516	1910	5	26.726	LICK	Z	229	41	0.970	0.312	73.2	88.9	1.5E5
517	1910	5	26.741	LICK	WS	226(2)	2	0.963	0.295	71.8	91.3	6.4E3
518	1910	5	26.744	HELWAN	R30	292(2)	10	0.963	0.296	71.9	91.2	6.4E3
519	1910	5	26.255	HELWAN	R30	293(2)	25	0.963	0.296	71.9	91.1	6.5E3
520	1910	5	26.275	HELWAN	R30	294(2)	5	0.963	0.297	71.9	91.1	6.5E3
521	1910	5	26.289	HELWAN	R30	295(2)	3	0.964	0.298	72.1	90.8	6.5E3
522	1910	5	26.298	HELWAN	R30	296(2)	3	0.964	0.298	72.1	90.8	6.5E3
523	1910	5	26.348	HELWAN	R30	297(2)	3	0.964	0.298	72.1	90.8	6.5E3

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Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	τ (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
524	1910	5	26.385	CATANIA	EF	19	0.965	0.300	72.2	90.6	6.5E3	
525	1910	5	26.460	CORDOBA	AG	2563(3)	75	0.966	0.302	90.2	6.6E3	
526	1910	5	26.494	CORDOBA	AG	2564A	11	0.966	0.303	90.1	6.6E3	
526	1910	5	26.497	CORDOBA	AG	2564B	30	0.967	0.304	90.1	6.6E3	
527	1910	5	26.515	CORDOBA	AG	2566(2)	2	0.967	0.304	90.0	6.6E3	
528	1910	5	26.529	CORDOBA	AG	2567A	3	0.967	0.305	89.9	6.6E3	
528	1910	5	26.570	HARVARD	MC907(2)	29	0.968	0.306	72.7	89.7	1.1E4	
529	1910	5	26.570	HARVARD	MA1082	60	0.968	0.307	72.8	89.6	1.1E4	
530	1910	5	26.585	HARVARD	R40	P7-271A	0.16	0.969	0.309	73.0	89.3	4.1E3
531	1910	5	26.660	LOWELL	R40	P7-271B	0.50	0.969	0.309	73.0	89.3	4.1E3
531	1910	5	26.660	LOWELL	R40	P7-271C	1	0.969	0.309	73.0	89.3	4.1E3
531	1910	5	26.661	LOWELL	R40	P7-271D	2	0.969	0.309	73.0	89.3	4.1E3
532	1910	5	26.663	LOWELL	CR	220	1	0.969	0.310	73.0	89.2	4.4E3
532	1910	5	26.681	LIK	CR	221(2)	10	0.969	0.310	73.0	89.1	4.4E3
533	1910	5	26.684	LIK	CR	222(2)	15	0.969	0.312	73.1	89.0	4.4E3
534	1910	5	26.691	LIK	CR	223(3)	82	0.970	0.313	73.2	88.8	4.4E3
535	1910	5	26.726	LIK	CR	224(3)	10	0.971	0.327	74.2	87.0	2.8E4
536	1910	5	26.762	KODAIKANAL	CR	35	0.977	0.331	74.4	86.6	2.2E4	
537	1910	5	27.169	TRONDVAAL	TC	C6/91	40	0.981	0.331	74.8	85.8	3.9E4
538	1910	5	27.262	CORDOBA	PB	P-92(2)	75	0.982	0.338	75.0	85.5	4.0E4
539	1910	5	27.442	CORDOBA	PB	P-93(2)	15	0.982	0.340	75.0	85.0	2.3E4
540	1910	5	27.478	CORDOBA	PB	S-14(2)	60	0.982	0.339	75.3	85.0	2.0E4
541	1910	5	27.507	LIK	SB	P-94(2)	117	0.984	0.344	75.3	85.0	5.3E4
542	1910	5	27.512	CORDOBA	PB	C-338(2)	117	0.984	0.344	75.4	84.6	4.0E4
543	1910	5	27.645	YERKES	B6	C-338(2)	129	0.984	0.344	75.4	84.6	4.0E4
544	1910	5	27.645	YERKES	B10	C-338	150	0.985	0.347	75.4	84.6	3.3E4
545	1910	5	27.649	YERKES	X	WS	118	0.985	0.348	75.4	84.6	2.0E5
546	1910	5	27.727	LIK	WF	237(2)	118	0.985	0.348	75.4	84.6	4.0E4
547	1910	5	27.745	LIK	L	238	118	0.985	0.348	75.4	84.6	1.7E5
548	1910	5	27.745	LIK	Z	239	118	0.985	0.348	75.4	84.6	1.7E5
549	1910	5	27.745	LIK	R30	298(2)	2	0.978	0.330	74.4	86.6	7.2E3
550	1910	5	27.250	HELWAN	R30	299(2)	10	0.978	0.331	74.5	86.5	7.2E3
551	1910	5	27.278	HELWAN	R30	300(2)	20	0.978	0.331	74.5	86.5	7.2E3
552	1910	5	27.278	HELWAN	R30	302(2)	10	0.979	0.332	74.5	86.4	7.2E3
553	1910	5	27.305	HELWAN	R30	303(2)	2	0.979	0.332	74.6	86.3	7.2E3
554	1910	5	27.312	HELWAN	R30	304(2)	3	0.979	0.333	74.6	86.3	7.2E3
555	1910	5	27.332	HELWAN	R30	2568(2)	10	0.981	0.337	74.8	85.7	7.3E3
556	1910	5	27.435	CORDOBA	AG	2570(2)	60	0.982	0.338	74.9	85.6	7.4E3
557	1910	5	27.467	CORDOBA	AG	2571A	3	0.982	0.339	74.9	85.6	7.4E3
558	1910	5	27.498	CORDOBA	AG	2571B	5	0.982	0.340	75.0	85.5	7.4E3
559	1910	5	27.513	CORDOBA	AG	2572(2)	30	0.982	0.340	75.0	85.4	7.4E3
560	1910	5	27.537	CORDOBA	AG	2573A	5	0.982	0.340	75.0	85.4	7.4E3
560	1910	5	27.531	CORDOBA	AG	2573B	10	0.982	0.340	75.0	85.4	7.4E3
561	1910	5	27.684	LIK	CR	230	11	0.985	0.346	75.3	84.8	4.9E3
562	1910	5	27.688	LIK	CR	231(2)	15	0.985	0.346	75.3	84.8	4.9E3
563	1910	5	27.695	LIK	CR	232(3)	14	0.985	0.346	75.3	84.8	4.9E3
564	1910	5	27.739	LIK	CR	233(3)	100	0.985	0.348	75.4	84.6	4.9E3
565	1910	5	27.782	LIK	CR	234(2)	112	0.986	0.349	75.5	84.6	4.9E3
566	1910	5	28.445	CORDOBA	PB	P-96(2)	16	0.996	0.373	76.7	82.0	4.4E4
567	1910	5	28.474	CORDOBA	PB	P-97(2)	60	0.997	0.374	76.7	81.8	4.4E4

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
568	1910	5	28.602	INDIANA	R8	C-197	5	0.999	0.379	76.9	81.4	2.8E4
569	1910	5	28.635	INDIANA	R8	C-198	90	0.999	0.380	76.9	81.3	2.8E4
570	1910	5	28.692	LOWELL	B35	P7-282	45	1.000	0.382	77.0	81.1	3.2E4
571	1910	5	28.719	LOWELL	C10	P7-281	128	1.000	0.383	77.1	81.0	1.1E5
572	1910	5	28.751	LICK	WF	246	124	1.001	0.385	77.1	80.9	4.4E4
573	1910	5	28.754	LICK	Z	247	132	1.001	0.385	77.1	80.9	1.9E5
574	1910	5	28.768	LICK	WS	245	173	1.001	0.385	77.1	80.8	3.7E4
575	1910	5	28.814	DIAMONDHEAD	HE	HE-50	93	1.002	0.387	77.2	80.7	3.8E4
576	1910	5	28.829	DIAMONDHEAD	TE	HE-T10	136	1.002	0.388	77.2	80.6	8.0E4
577	1910	5	28.862	DIAMONDHEAD	HE	HE-51	41	1.003	0.389	77.3	80.5	3.6E4
578	1910	5	28.254	HELWAN	R30	305(2)	2	0.993	0.366	76.4	82.6	8.0E3
579	1910	5	28.261	HELWAN	R30	306(2)	10	0.993	0.367	76.4	82.6	8.0E3
580	1910	5	28.309	HELWAN	R30	309(2)	2	0.994	0.368	76.4	82.4	8.0E3
581	1910	5	28.343	HELWAN	R30	310(2)	3	0.995	0.370	76.5	82.3	8.0E3
582	1910	5	28.448	CORDOBA	AG	2574	11	0.996	0.374	76.7	81.9	8.2E3
583	1910	5	28.481	CORDOBA	AG	257	52	0.997	0.375	76.7	81.8	8.2E3
584	1910	5	28.573	HARVARD	MC410	111	0.998	0.378	76.9	81.5	1.3E4	
585	1910	5	28.676	LOWELL	R40	P7-283A	0.50	1.000	0.382	77.0	81.1	5.1E3
585	1910	5	28.677	LOWELL	R40	P7-283B	0.1	1.000	0.382	77.0	81.1	5.1E3
585	1910	5	28.679	LOWELL	R40	P7-283C	2	1.000	0.382	77.0	81.1	5.1E3
586	1910	5	28.690	LICK	CR	240(2)	16	1.000	0.383	77.0	81.1	5.4E3
587	1910	5	28.697	LICK	CR	241(2)	20	1.000	0.384	77.1	80.9	5.4E3
588	1910	5	28.739	LICK	CR	242(2)	90	1.001	0.386	77.2	80.8	5.5E3
589	1910	5	28.782	LICK	CR	243(2)	33	1.001	0.396	77.5	79.8	6.5E4
590	1910	5	29.067	TOKYO	D	92	91	1.006	0.412	78.0	78.5	4.8E4
591	1910	5	29.497	CORDOBA	PB	P-99(2)	90	1.012	0.412	78.0	78.5	4.8E4
592	1910	5	29.584	HARVARD	I8	I36720	51	1.014	0.415	78.1	78.2	2.5E4
593	1910	5	29.587	HARVARD	AC1.5	I1683	32	1.014	0.416	78.1	78.2	9.0E4
594	1910	5	29.638	INDIANA	R8	C-199	95	1.014	0.417	78.1	78.1	3.1E4
594	1910	5	29.651	YERKES	B10	C-342(2)	117	1.015	0.418	78.2	78.0	2.4E4
595	1910	5	29.690	LOWELL	B35	P7-288	57	1.015	0.419	78.2	77.9	3.5E4
597	1910	5	29.717	LOWELL	C10	P7-290	135	1.016	0.420	78.3	77.8	1.2E5
598	1910	5	29.722	LICK	WS	252(2)	50	1.016	0.421	78.3	77.8	4.0E4
599	1910	5	29.748	LICK	WF	254(2)	125	1.016	0.422	78.3	77.7	4.8E4
600	1910	5	29.759	LICK	Z	255	142	1.016	0.422	78.3	77.7	2.0E5
601	1910	5	29.990	TOKYO	D	100	1.020	0.431	78.5	77.0	6.3E4	
603	1910	5	29.245	HELWAN	R30	311(2)	3	1.008	0.403	77.8	79.3	8.8E3
604	1910	5	29.278	HELWAN	R30	313(2)	10	1.009	0.404	77.8	79.2	8.8E3
605	1910	5	29.310	HELWAN	R30	314(2)	20	1.009	0.405	77.8	79.0	8.0E3
606	1910	5	29.393	HELWAN	R30	315(2)	5	1.010	0.407	77.9	79.1	8.0E3
607	1910	5	29.478	CORDOBA	AG	2578	60	1.012	0.412	78.0	78.4	9.0E3
608	1910	5	29.512	CORDOBA	AG	2579	30	1.012	0.413	78.1	78.3	1.5E4
609	1910	5	29.562	HARVARD	MA12	MA1084	9	1.013	0.415	78.1	78.2	1.5E4
610	1910	5	29.577	HARVARD	MC16	MC411(2)	24	1.013	0.415	78.1	78.2	1.5E4
611	1910	5	29.579	HARVARD	MA12	MA1085	35	1.013	0.415	78.1	78.2	1.5E4
612	1910	5	29.669	LOWELL	R40	P7-287A, B, C	7+	1.015	0.419	78.2	78.0	5.6E3
613	1910	5	29.689	LICK	CR	248(2)	2	1.015	0.420	78.2	77.9	5.9E3
614	1910	5	29.697	LICK	CR	249(3)	18	1.015	0.420	78.3	77.8	6.0E3
615	1910	5	29.733	LICK	CR	250(2)	80	1.016	0.421	78.3	77.8	5.7E3
616	1910	5	29.735	LOWELL	R40	P7-296A, B, C	2+	1.016	0.421	78.3	77.8	5.7E3

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	τ (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
617	1910	5	29.776	LICK	CR	251(2)	44	1.016	0.423	78.3	77.6	6.0E3
618	1910	5	30.498	TRANSVAAL	TC	C6/92	120	1.024	0.440	78.8	76.3	2.9E4
619	1910	5	30.499	CORDOBA	PB	P-102(2)	135	1.028	0.450	79.0	75.6	5.3E4
620	1910	5	30.543	LICK	S	S-15(2)	900	1.028	0.451	79.1	75.2	4.6E4
621	1910	5	30.657	YERKES	B6	C-344(2)	122	1.030	0.456	79.1	75.2	5.1E4
622	1910	5	30.657	YERKES	B10	C-344(2)	122	1.030	0.456	79.1	75.2	2.7E4
623	1910	5	30.722	LOWELL	C10	P7-297	127	1.031	0.458	79.1	75.0	1.3E5
624	1910	5	30.722	LOWELL	C8	P7-298	127	1.031	0.458	79.1	75.0	1.6E5
625	1910	5	30.740	LOWELL	B35	P7-301	173	1.031	0.459	79.2	74.9	5.2E4
626	1910	5	30.747	LICK	WF	262(2)	129	1.031	0.459	78.8	76.3	9.6E3
627	1910	5	30.753	HELWAN	R30	318(2)	5	1.024	0.440	78.8	76.0	9.6E3
628	1910	5	30.268	HELWAN	R30	319(2)	20	1.024	0.441	78.8	76.2	9.6E3
629	1910	5	30.283	HELWAN	R30	320(2)	20	1.024	0.442	78.8	76.1	9.6E3
630	1910	5	30.304	HELWAN	R30	321(2)	10	1.025	0.442	78.8	76.0	9.7E3
631	1910	5	30.336	HELWAN	R30	324	10	1.025	0.444	78.8	75.7	9.8E3
632	1910	5	30.465	CORDOBA	AG	2583(2)	56	1.027	0.448	78.9	75.6	9.8E3
633	1910	5	30.516	CORDOBA	AG	2584	30	1.028	0.450	79.0	75.5	9.8E3
634	1910	5	30.538	CORDOBA	AG	2585A	5	1.028	0.451	79.0	75.5	9.8E3
634	1910	5	30.534	CORDOBA	AG	2585B	10	1.028	0.451	79.0	75.5	9.8E3
635	1910	5	30.689	LICK	CR	256(2)	2	1.031	0.457	79.1	75.1	6.5E3
636	1910	5	30.696	LICK	CR	257(2)	13	1.031	0.457	79.1	75.1	6.5E3
637	1910	5	30.751	LOWELL	R40	P7-300A, B, C	4+	1.031	0.459	79.2	74.9	6.2E3
638	1910	5	30.776	LICK	CR	259(2)	46	1.032	0.460	79.2	74.9	6.5E3
639	1910	5	31.238	TRANSVAAL	TC	C6/93	79	1.039	0.477	79.2	73.7	3.1E4
640	1910	5	31.484	CORDOBA	PB	P-103(2)	121	1.043	0.487	79.6	73.1	5.7E4
641	1910	5	31.540	CORDOBA	PB	P-104(2)	130	1.044	0.489	79.6	72.9	5.7E4
642	1910	5	31.635	INDIANA	R8	C-206	90	1.045	0.492	79.7	72.7	3.6E4
643	1910	5	31.719	LOWELL	B35	P7-303(2)	131	1.046	0.496	79.7	72.5	4.2E4
644	1910	5	31.724	LICK	WS	268	146	1.046	0.496	79.7	72.4	4.7E4
645	1910	5	31.750	LICK	WF	270(2)	122	1.047	0.497	79.7	72.4	5.7E4
646	1910	5	31.755	LICK	Z	271	136	1.047	0.497	79.7	72.4	2.4E5
647	1910	5	31.756	LOWELL	C10	P7-304	240	1.047	0.497	79.7	72.4	1.4E5
648	1910	5	31.458	CORDOBA	AG	2587(2)	60	1.042	0.486	79.6	73.1	1.1E4
649	1910	5	31.492	CORDOBA	AG	2588	30	1.043	0.487	79.6	73.1	1.1E4
650	1910	5	31.508	CORDOBA	AG	2589	10	1.043	0.488	79.6	73.0	5.3E3
651	1910	5	31.521	CORDOBA	AG	2590A	3	1.043	0.488	79.6	73.0	5.3E3
652	1910	5	31.517	CORDOBA	AG	2590B	5	1.043	0.488	79.6	73.0	5.3E3
653	1910	5	31.692	LICK	CR	264	2	1.046	0.495	79.7	72.6	7.0E3
654	1910	5	31.699	LICK	CR	265	13	1.046	0.496	79.7	72.5	7.0E3
655	1910	5	31.734	LICK	CR	266(2)	76	1.047	0.496	79.7	72.4	7.0E3
656	1910	5	31.777	LICK	CR	267(2)	45	1.047	0.498	79.8	72.3	6.7E3
657	1910	6	31.791#	LOWELL	R40	P7-307A, B, C, D	8+	1.047	0.498	79.8	71.7	1.3E5
658	1910	6	31.079	DAIREN	S	105	111	1.052	0.509	79.9	71.7	1.6E5
659	1910	6	31.242	TRANSVAAL	TC	C6/94	176	1.054	0.515	79.9	71.3	3.4E4
660	1910	6	31.467	CORDOBA	PB	P-106(2)	78	1.058	0.524	80.0	70.8	6.1E4
661	1910	6	31.574	HARVARD	MC12	25	1.060	0.528	80.1	70.6	1.9E4	
662	1910	6	31.598	HARVARD	I8	136721	87	1.060	0.529	80.1	70.5	3.1E4
663	1910	6	31.664	YERKES	B6	C-347	125	1.061	0.531	80.1	70.4	5.1E4
664	1910	6	31.664	YERKES	B10	C-347(2)	125	1.062	0.531	80.1	70.4	5.1E4
665	1910	6	31.719	LICK	WS	277	50	1.062	0.533	80.1	70.2	5.1E4

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/min)
666	1910	6	1.748	LICK	WF	279(2)	134	1.062	0.534	80.1	70.2	6.1E4
667	1910	6	1.796	DIAMONDHEAD	TE	HE-T11	55	1.063	0.536	80.1	70.1	1.6E5
668	1910	6	1.480	CORDOBA	AG	2595(3)	120	1.058	0.524	80.1	70.8	1.1E4
669	1910	6	1.682	MOUNT WILSON	MWR	81(2!)	112	1.061	0.532	80.1	70.3	5.6E3
670	1910	6	1.688	LICK	CR	272(2)	12	1.061	0.532	80.1	70.3	7.5E3
671	1910	6	1.695	LICK	CR	273(3)	13	1.061	0.532	80.1	70.3	9.4E3
672	1910	6	1.729	LICK	CR	274(2)	80	1.062	0.534	80.1	70.2	9.4E3
673	1910	6	1.760	LICK	CR	275(2)	64	1.062	0.535	80.1	70.2	9.4E3
674	1910	6	2.779	HARVARD	I8	136723	74	1.075	0.567	80.3	68.4	3.3E4
675	1910	6	2.597	INDIANA	R8	C-201	90	1.076	0.568	80.3	68.3	4.2E4
676	1910	6	2.635	LOWELL	B35	P7-312	119	1.077	0.571	80.3	68.2	4.8E4
677	1910	6	2.722	LOWELL	C10	P7-311	121	1.077	0.571	80.3	68.2	1.6E5
678	1910	6	2.723	LOWELL	WF	287(2)	131	1.078	0.572	80.3	68.1	6.5E4
679	1910	6	2.748	LICK	HE	HE-53	62	1.079	0.575	80.3	68.1	5.3E4
680	1910	6	2.813	DIAMONDHEAD	HE	329(3)	20	1.070	0.555	80.2	69.1	1.2E4
681	1910	6	2.276	HELWAN	R30	333(2)	10	1.071	0.557	80.2	69.1	1.2E4
682	1910	6	2.362	HELWAN	MC16	MC414(2)	32	1.075	0.566	80.3	68.5	2.0E4
683	1910	6	2.577	HARVARD	WF	86	25	1.077	0.570	80.3	68.3	1.1E4
684-R	1910	6	2.682	MOUNT WILSON	MWR	86	14	1.077	0.570	80.3	68.2	8.1E3
685	1910	6	2.688	LICK	CR	281(2)	2	1.077	0.572	80.3	68.2	5.6E3
686	1910	6	2.695	LICK	CR	282(2)	14	1.077	0.572	80.3	68.2	1.0E4
687	1910	6	2.729	MOUNT WILSON	MWR	87(2!)	25	1.077	0.572	80.3	68.2	5.6E3
687-R	1910	6	2.729	MOUNT WILSON	CR	90	11	0.077	0.572	80.3	68.2	1.1E4
688	1910	6	2.733	LICK	CR	283(2)	40	1.078	0.574	80.3	68.1	8.1E3
689	1910	6	2.778	LICK	CR	284(3)	121	1.089	0.601	80.4	66.7	7.0E4
690	1910	6	3.488	CORDOBA	PB	P-108(2)	30	1.090	0.603	80.4	66.6	7.0E4
691	1910	6	3.543	CORDOBA	PB	P-109(2)	131	1.093	0.610	80.4	66.2	2.9E5
692	1910	6	3.748	LICK	WF	295(2)	131	1.093	0.613	80.4	66.1	5.7E4
693	1910	6	3.748	LICK	Z	HE-54	153	1.094	0.613	80.4	67.1	1.3E4
694	1910	6	3.816	DIAMONDHEAD	HE	334(2)	5	1.086	0.592	80.4	67.1	1.3E4
695	1910	6	3.260	HELWAN	R30	336(2)	20	1.086	0.593	80.4	67.1	1.3E4
696	1910	6	3.289	HELWAN	WF	337(2)	10	1.087	0.595	80.4	67.0	1.3E4
697	1910	6	3.337	HELWAN	R30	337(2)	120	1.089	0.601	80.4	66.7	1.3E4
698	1910	6	3.492	CORDOBA	AG	2598(2)	3	1.092	0.608	80.4	66.3	8.6E3
699	1910	6	3.690	LICK	CR	289(2)	25	1.092	0.608	80.4	66.3	1.2E4
700-R	1910	6	3.691	MOUNT WILSON	MWR	88	25	1.092	0.608	80.4	66.3	8.6E3
701	1910	6	3.696	LICK	CR	290(3)	14	1.092	0.608	80.4	66.2	8.7E3
702	1910	6	3.724	MOUNT WILSON	MWR	10(2!)	25	1.093	0.610	80.4	66.3	5.6E3
702-R	1910	6	3.724	MOUNT WILSON	MWR	10	25	1.093	0.610	80.4	66.3	1.2E4
703-R	1910	6	3.726	MOUNT WILSON	MWR	89	25	1.093	0.610	80.4	66.3	1.2E4
704	1910	6	3.734	LICK	CR	291(2)	90	1.093	0.610	80.4	66.3	8.6E3
705	1910	6	3.780	LICK	CR	292(2)	40	1.094	0.612	80.4	66.2	8.7E3
706	1910	6	4.485	CORDOBA	PB	P-111(2)	120	1.104	0.638	80.3	64.9	7.5E4
707	1910	6	4.540	CORDOBA	PB	P-112(2)	30	1.105	0.641	80.3	64.8	7.5E4
708	1910	6	4.577	HARVARD	I8	MC417	24	1.106	0.642	80.3	64.8	2.3E4
709	1910	6	4.599	HARVARD	WS	I36727	64	1.106	0.643	80.3	64.7	3.8E4
710	1910	6	4.725	LICK	WF	301	55	1.108	0.648	80.3	64.5	6.2E4
711	1910	6	4.748	LICK	Z	303	121	1.109	0.648	80.3	64.5	7.4E4
712	1910	6	4.751	LICK	Z	304	130	1.109	0.649	80.3	64.4	3.1E5
713	1910	6	4.768	LICK	W6	HE-55	165	1.110	0.651	80.3	64.4	6.0E4
714	1910	6	4.815	DIAMONDHEAD	HE	339(2)	135	1.101	0.650	80.4	65.3	1.4E4
715	1910	6	4.257	HELWAN	R30		135	1.101	0.650	80.4		

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Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
716	1910	6	4.274	HELWAN	R30	340(2)	30	1.101	0.630	80.4	65.3	1.4E4
717	1910	6	4.328	HELWAN	R30	341(2)	10	1.102	0.632	80.4	65.2	1.4E4
718	1910	6	4.454	CORDOBA	AG	2601A	5	1.104	0.637	80.3	65.0	1.4E4
718	1910	6	4.447	CORDOBA	AG	2601B	11	1.104	0.637	80.3	64.9	1.4E4
719	1910	6	4.507	CORDOBA	AG	2603(2)	120	1.105	0.639	80.3	64.6	1.3E4
720-R	1910	6	4.693	MOUNT WILSON	MWR	91	118	1.108	0.646	80.3	64.6	9.1E3
721	1910	6	4.696	LICK	CR	297(2)	7	1.108	0.646	80.3	64.6	9.1E3
722	1910	6	4.700	LICK	CR	298	1	1.108	0.647	80.3	64.6	9.1E3
723-R	1910	6	4.715	MOUNT WILSON	MWR	92	18	1.108	0.647	80.3	64.5	1.3E4
724-R	1910	6	4.737	MOUNT WILSON	MWR	93(2!)	20	1.108	0.648	80.3	64.5	5.6E3
724	1910	6	4.737	MOUNT WILSON	MWR	93	20	1.108	0.648	80.3	64.5	1.3E4
725	1910	6	4.738	LOWELL	R40	P7-314	30	1.108	0.648	80.3	64.5	8.7E3
726	1910	6	4.741	LICK	CR	299(2)	100	1.108	0.648	80.3	64.4	9.2E3
727	1910	6	4.783	LICK	CR	300	20	1.109	0.650	80.3	63.9	2.0E5
728	1910	6	5.072	DAIREN	S	111	130	1.114	0.661	80.3	63.3	7.9E4
729	1910	6	5.489	CORDOBA	PB	P-115(2)	120	1.120	0.677	80.2	63.2	7.9E4
730	1910	6	5.544	CORDOBA	PB	P-116(3)	30	1.121	0.679	80.2	63.2	7.9E4
731	1910	6	5.638	YERKES	G	C-348	68	1.122	0.682	80.2	63.0	1.6E5
732	1910	6	5.638	YERKES	B6	C-348	68	1.122	0.682	80.2	63.0	6.5E4
733	1910	6	5.638	YERKES	B10	C-348(2)	68	1.122	0.682	80.2	63.0	4.0E4
734	1910	6	5.638	YERKES	X	C-348	68	1.122	0.682	80.2	63.0	8.6E4
735	1910	6	5.719	LICK	WS	309(2)	58	1.124	0.685	80.2	62.9	6.6E4
736	1910	6	5.724	LOWELL	B35	P7-317	122	1.124	0.686	80.2	62.9	5.8E4
737	1910	6	5.726	LOWELL	C10	P7-318	125	1.124	0.686	80.2	62.8	7.8E4
738	1910	6	5.746	LICK	WF	311	130	1.124	0.686	80.2	62.8	3.3E5
739	1910	6	5.748	LICK	Z	312	135	1.124	0.686	80.2	62.8	6.6E4
740	1910	6	5.764	LICK	WS	310	79	1.124	0.687	80.2	62.8	6.6E4
741	1910	6	5.815	DIAMONDHEAD	HE	HE-56	132	1.125	0.689	80.2	62.7	6.4E4
742	1910	6	5.266	HELWAN	R30	342(2)	5	1.117	0.668	80.3	63.6	1.5E4
743	1910	6	5.280	HELWAN	R30	343(2)	30	1.117	0.669	80.3	63.5	1.5E4
744	1910	6	5.306	HELWAN	R30	344(2)	20	1.117	0.670	80.2	63.5	1.5E4
745	1910	6	5.326	HELWAN	R30	346(2)	10	1.117	0.670	80.2	63.2	1.5E4
746	1910	6	5.506	CORDOBA	AG	2606(2)	120	1.120	0.677	80.2	62.9	9.7E3
747	1910	6	5.690	LICK	CR	305	2	1.123	0.684	80.2	62.9	9.7E3
748	1910	6	5.696	LICK	CR	306(2)	13	1.123	0.684	80.2	62.9	9.7E3
749-R	1910	6	5.717	MOUNT WILSON	MWR	96(2!)	9	1.124	0.685	80.2	62.9	5.6E3
749	1910	6	5.717	MOUNT WILSON	MWR	96	9	1.124	0.685	80.2	62.9	1.3E4
750	1910	6	5.736	LICK	CR	307(2)	100	1.124	0.688	80.2	62.8	9.7E3
751	1910	6	5.782	LICK	CR	308(2)	29	1.125	0.688	80.2	62.3	3.6E5
752	1910	6	6.068	DAIREN	B	116	130	1.129	0.699	80.1	61.6	8.4E4
753	1910	6	6.068	DAIREN	S	117	130	1.129	0.720	80.0	61.1	5.9E5
754	1910	6	6.499	CORDOBA	PB	P-118(2)	118	1.124	0.699	80.1	61.7	8.3E4
755	1910	6	6.554	CORDOBA	G	C-349	75	1.138	0.721	80.0	61.4	6.9E4
756	1910	6	6.631	YERKES	B6	C-349(2)	120	1.138	0.721	80.0	61.4	4.2E4
757	1910	6	6.658	YERKES	B10	C-349(2)	120	1.138	0.721	80.0	61.4	9.1E4
758	1910	6	6.658	YERKES	X	C-349	120	1.138	0.721	80.0	61.3	6.9E4
759	1910	6	6.658	YERKES	WF	317	50	1.139	0.723	80.0	61.3	8.2E4
760	1910	6	6.658	YERKES	Z	320	120	1.139	0.724	80.0	61.3	3.5E5

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ ($^{\circ}$)	α ($^{\circ}$)	Scale (km/mm)
764	1910	6	6.762	LICK	WS	318	74	1.140	0.725	79.9	61.3	6.9E4
765	1910	6	6.837	DIAMONDHEAD	HE	HE-58	99	1.141	0.728	79.9	61.2	6.7E4
766	1910	6	6.277	HELWAN	R30	347(2)	30	1.132	0.707	80.1	62.0	1.5E4
767	1910	6	6.295	HELWAN	R30	348(2)	10	1.132	0.707	80.1	62.0	1.5E4
768	1910	6	6.512	CORDOBA	AG	2609	120	1.136	0.715	80.0	61.7	1.6E4
769	1910	6	6.696	LICK	CR	314(2)	113	1.139	0.722	80.0	61.4	1.0E4
770	1910	6	6.719	LICK	CR	315(2)	50	1.139	0.723	80.0	61.3	1.0E4
771	1910	6	6.771	LICK	CR	316(2)	50	1.140	0.725	79.9	61.3	1.0E4
772	1910	6	7.001	TOKYO	D	120	105	1.143	0.734	79.9	60.9	2.2E5
773	1910	6	7.061	DAIREN	B	121	115	1.144	0.736	79.9	60.8	3.8E5
774	1910	6	7.449	CORDOBA	PB	P-120(2)	50	1.150	0.751	79.8	60.3	8.8E4
775	1910	6	7.509	CORDOBA	PB	P-121(2)	120	1.151	0.753	79.7	60.2	8.8E4
776	1910	6	7.574	CORDOBA	PB	P-123	130	1.152	0.756	79.7	60.1	8.8E4
777	1910	6	7.619	YERKES	B6	C-350	115	1.153	0.757	79.7	60.0	7.3E4
778	1910	6	7.619	YERKES	B10	C-350(2)	115	1.153	0.757	79.7	60.0	4.4E4
779	1910	6	7.718	LICK	WS	321	54	1.154	0.761	79.7	59.9	7.3E4
780	1910	6	7.741	LICK	WF	323(2)	120	1.155	0.762	79.7	59.9	8.7E4
781	1910	6	7.760	LICK	WS	322(2)	65	1.155	0.763	79.7	59.8	7.3E4
782	1910	6	7.284	HELWAN	R30	350(2)	30	1.148	0.745	79.8	60.5	1.6E4
783	1910	6	7.300	HELWAN	R30	351(2)	10	1.148	0.745	79.8	60.5	1.6E4
784	1910	6	7.535	CORDOBA	AG	2613(2)	120	1.152	0.754	79.7	60.2	1.2E5
785	1910	6	8.056	DAIREN	S	125	100	1.160	0.774	79.7	59.4	1.2E5
786	1910	6	8.479	CORDOBA	PB	P-124(2)	120	1.166	0.790	79.4	58.8	9.2E4
787	1910	6	8.600	HARVARD	I8	136734	60	1.168	0.795	79.4	58.7	4.7E4
788	1910	6	8.715	LOWELL	C10	P7-321	124	1.170	0.799	79.3	58.5	2.3E5
789	1910	6	8.715	LOWELL	B35	P7-322(2)	120	1.170	0.799	79.3	58.5	6.7E4
790	1910	6	8.745	LICK	WF	331	120	1.170	0.800	79.0	58.5	9.1E4
791	1910	6	8.759	LICK	WS	330	60	1.171	0.801	79.3	58.5	7.7E4
792	1910	6	8.284	HELWAN	R30	352(2)	15	1.163	0.801	79.5	59.1	1.7E4
793	1910	6	8.518	CORDOBA	AG	2617	120	1.167	0.791	79.4	58.8	1.7E4
794	1910	6	8.698	LICK	CR	326(2)	13	1.170	0.798	79.3	58.5	1.1E4
795	1910	6	8.732	LICK	CR	327(2)	22	1.170	0.800	79.3	58.5	1.1E4
796	1910	6	9.058	DAIREN	S	128	102	1.175	0.812	79.2	58.1	1.2E5
797	1910	6	9.499	CORDOBA	PB	P-127	133	1.182	0.829	79.0	57.5	9.7E4
798	1910	6	9.655	YERKES	B10	C-351(2)	105	1.184	0.834	79.0	57.3	4.9E4
799	1910	6	9.696	LOWELL	B35	P7-323	60	1.185	0.836	79.0	57.2	7.0E4
800	1910	6	9.725	LICK	WS	337	40	1.186	0.837	78.9	57.2	8.0E4
801	1910	6	9.746	LICK	WF	339	102	1.186	0.838	78.9	57.2	9.5E4
802	1910	6	9.761	LICK	WS	338	61	1.186	0.838	78.9	57.2	8.0E4
803	1910	6	9.812	DIAMONDHEAD	HE	HE-59	100	1.187	0.840	78.9	57.1	1.6E5
804	1910	6	9.302	HELWAN	R30	354(2)	30	1.179	0.821	79.1	57.8	1.8E4
805	1910	6	9.322	HELWAN	R30	355(2)	10	1.179	0.822	79.1	57.7	1.8E4
806	1910	6	9.511	CORDOBA	AG	2620	120	1.182	0.829	79.0	57.5	1.8E4
807	1910	6	9.702	LICK	CR	334	6	1.185	0.836	78.9	57.2	1.2E4
808	1910	6	9.736	LICK	CR	335(2)	72	1.186	0.837	78.9	57.2	1.2E4
809	1910	6	10.713	LICK	WF	344	16	1.201	0.874	78.5	56.0	9.9E4
810	1910	6	10.281	HELWAN	R30	356	5	1.194	0.858	78.7	56.5	1.9E4
811	1910	6	10.290	HELWAN	R30	357	10	1.194	0.858	78.7	56.5	1.9E4
812	1910	6	10.713	LICK	CR	342	16	1.201	0.874	78.5	56.0	1.2E4
813	1910	6	11.476	CORDOBA	PB	P-129	60	1.213	0.903	78.2	55.1	1.1E5
814	1910	6	11.731	LICK	WF	348	50	1.217	0.912	78.0	54.8	1.0E5
815	1910	6	11.269	HELWAN	R30	359(2)	10	1.209	0.895	78.3	55.3	1.9E4

Table 3 (Continued)

Figure	Year	Month	Day	Observatory	Camera	Plate Number	Exp. (min)	r (A.U.)	Δ (A.U.)	θ (°)	α (°)	Scale (km/mm)
816	1910	6	11.285	HELWAN	R30	360(2)	25	1.210	0.896	78.3	55.3	1.9E4
817	1910	6	11.704	LICK	CR	345(2)	11	1.216	0.911	78.1	54.8	1.3E4
818	1910	6	11.731	LICK	CR	346	50	1.217	0.912	78.0	54.8	1.3E4
819	1910	6	11.755	LICK	CR	347	11	1.217	0.913	78.0	54.7	1.3E4
820	1910	6	12.492	CORDOBA	AG	2625A	10	1.228	0.941	77.7	53.9	2.0E4
820	1910	6	12.483	CORDOBA	AG	2625B	15	1.228	0.941	77.7	53.9	2.0E4
821	1910	6	12.704	LICK	CR	350	2	1.232	0.949	77.6	53.6	1.3E4
822	1910	6	12.709	LICK	CR	351	10	1.232	0.949	77.6	53.6	1.3E4
823	1910	6	12.734	LICK	CR	352(2)	60	1.232	0.950	77.5	53.6	1.3E4
824	1910	6	14.479	CORDOBA	AG	2631A	10	1.259	1.015	76.6	51.7	2.2E4
824	1910	6	14.490	CORDOBA	AG	2631B	15	1.259	1.015	76.6	51.7	2.2E4
825	1910	6	24.699	LOWELL	B35	P7-327	42	1.416	1.387	70.3	42.5	1.2E5
826	1910	6	25.284	HELWAN	R30	363	60	1.424	1.408	69.9	42.1	3.1E4
827	1910	6	26.282	HELWAN	R30	365	60	1.440	1.443	69.2	41.3	3.1E4
828	1910	6	27.738	LICK	CR	356	50	1.462	1.494	68.2	40.2	2.1E4
829	1910	6	28.729	LICK	NF	359	60	1.477	1.529	67.5	39.5	1.7E5
830	1910	7	1.727	LICK	CR	361	50	1.522	1.632	65.4	37.4	2.3E4
831	1910	7	1.727	LICK	W5	362	50	1.522	1.632	65.4	37.4	2.3E4
832	1910	12	13.027	LICK	CR	372	86	3.613	3.765	73.6	15.2	5.3E4
833	1910	12	30.024	LICK	CR	377	26	3.798	3.640	91.7	15.0	5.1E4
834	1910	12	30.044	LICK	CR	378	26	3.798	3.640	91.7	15.0	5.1E4
835	1911	2	22.875	LICK	CR	380	60	3.368	3.465	152.7	6.0	4.9E4
836	1911	3	29.679	LOWELL	R40	P7-330	9	4.711	3.863	144.4	7.1	5.2E4
837	1911	5	27.722	LICK	CR	390	90	5.266	5.251	85.3	11.1	7.4E4
838	1911	5	30.696	LOWELL	R40	P7-343	81	5.293	5.328	82.6	11.0	7.1E0

Notes For Table 3

- Figures 171 and 456 deleted.
- Number within parentheses after the plate number denotes the number of prints per plate.
- A, B, C, D, or E are used to denote multiple images on one plate.
- :: = No information on exposure time available.
- * = Estimated length of exposure.
- + = Total exposure of plate; exposure of individual images unknown.
- # = Estimated observation time.
- ! = Within parentheses indicates one print is digitally processed.
- R = Reverse print (Mt. Wilson prints only).
- ## = Denotes that figure has multiple prints with differing scales. See the following:

Figure	1		2	
	Scale (km/mm)	Figure	Figure	Scale (km/mm)
476-1	S(1) = 5.7E3	477-1	S(1) = 5.7E3	
476-2	S(2) = 7.4E3	477-2	S(2) = 7.4E3	
476-3	S(3) = 5.7E3	477-3	S(3) = 4.2E3	
476-4	S(4) = 4.2E3	477-4	S(4) = 3.8E3	

Table 4
Comparison of Visual and Photographic Observations

Figure	Table 3 Figure	Year	Month	Date	Observatory	Remarks
1	384	1910	May	14.574	Helwan	
2a	--	1910	May	14.579	Helwan	
2b	--	1910	May	14.579	Helwan	Detail of Figure 2a
2c	--	1910	May	14.579	Helwan	Drawing based on Figure 2a
3a	409	1910	May	21.653	Lowell	Multiple exposures
3b	--	1910	May	21	Catania	Drawing by A. Ricco*
4a	419	1910	May	22.674	Lowell	Multiple exposures
4b	--	1910	May	21	Catania	Drawing by A. Ricco*
5	475	1910	May	25.255	Helwan	Positive and negative print superimposed
6	--	1910	May	25	Catania	Drawing by A. Ricco*
7a	477	1910	May	25.269	Helwan	Print from Helwan negative
7b	477	1910	May	25.269	Helwan	Positive and negative print superimposed
7c	--	1910	May	25.269	--	Drawing from negative of Figure 7a
8a	745	1910	June	5.326	Helwan	Print of Helwan negative
8b	--	1910	June	5.326	Helwan	Drawing from negative of Figure 8a

*A. Ricco, Osservazioni astrofisiche della Cometa Halley, *Mem. Società degli Spettroscopisti Italiani, Ser. 2^a, Vol. 1, 1912,* pp. 97-111.

Table 5
Digitally Processed Sequential Images†

Figure	Crossreference to Figure in Table 3	Date/Time	Observatory	Scale
1	207	1910 May 4.990	Mt. Wilson	2730
2	228	1910 May 5.983	Mt. Wilson	2730
3	247	1910 May 6.993	Mt. Wilson	2730
4	265	1910 May 7.989	Mt. Wilson	2730
5	283	1910 May 8.987	Mt. Wilson	2730
6	298	1910 May 9.994	Mt. Wilson	2730
7	319	1910 May 10.993	Mt. Wilson	2730
8	338	1910 May 11.976	Lick	3380
9	358	1910 May 12.982	Lick	3380
10	373	1910 May 13.978	Lick	3380
11	384	1910 May 14.574	Helwan	3380
12	386	1910 May 14.980	Lick	3380
13	404	1910 May 21.241	Helwan	3380
14C	409, 410	1910 May 21.656	Lowell	3380
15	415	1910 May 22.247	Helwan	3380
16	424	1910 May 22.733	Lick	3380
17	434	1910 May 23.276	Helwan	3380
18	441	1910 May 23.694	Lick	3380
19*	--	1910 May 24.357	Vienna	3380
20C	454, 455	1910 May 24.662	Lowell	3380
21C	474-477	1910 May 25.257	Helwan	3380

Table 5 (Continued)

Figure	Crossreference to Figure in Table 3	Date/Time	Observatory	Scale
22	488	1910 May 25.705	Lick	3380
23C	518-521	1910 May 26.268	Helwan	3380
24	534	1910 May 26.691	Lick	3380
25	554	1910 May 27.312	Helwan	3380
26	564	1910 May 27.739	Lick	3380
27	588	1910 May 28.739	Lick	3380
28	615	1910 May 29.733	Lick	3380
29	638	1910 May 30.776	Lick	3380
30	652	1910 May 31.692	Lick	3380
31	669	1910 June 1.682	Mt. Wilson	2730
32	687	1910 June 2.729	Mt. Wilson	2730
33	702	1910 June 3.724	Mt. Wilson	2730
34	724	1910 June 4.737	Mt. Wilson	2730
35	749	1910 June 5.717	Mt. Wilson	2730

† From S.M. Larson and Z. Sekanina, *Astronomical Journal*, Vol. 90, p. 823, 1985, "Coma Morphology and Dust Emission Pattern of Periodic Comet Halley." Additional high-resolution images taken in 1910.

C - Composite

* Figure 19 is not included in Chapter 3.

Table 6
Slit Spectrograms of Comet Halley 1910 II

Figure	Date	Observatory	Exposure (Minutes)
1	1910 April 23.010	Lick	50
2	1910 April 28.998	Lick	77
3	1910 April 29.012	Mt. Wilson	20
4	1910 April 30.994	Lick	80
5	1910 May 10.988	Lick	85
6	1910 May 11.993	Mt. Wilson	30
7	1910 May 22.713	Lick	105
8	1910 June 2.734	Lick	145
9	1910 April 24.024	Mt. Wilson	12
10	1910 May 6.910	Santiago	124
11	1910 May 7.906	Santiago	124
12	1910 May 6.963	Lowell	106
13	1910 May 14.974	Lowell	45
14	1910 May 23.688	Lowell	160

Table 7
Objective Prism Spectrograms of Comet Halley 1910 II

Figure	Observatory	Instrument	Plate Number	Date 1910	Exposure (minutes)
15	Lick	WH	W189	February 2.688	62
16	Lick	WH	W193A	February 11.665	76
17	Lick	WH	W194A	February 28.650	65
18	Lick		2	April 20.041	42
19	Lick		3	April 21.040	43
20	Lick		4	April 22.036	51
21	Lick		9	April 29.033	51
22	Lick		11	May 1.031	51
23	Lick		12	May 2.033	53
24	Lick		13	May 3.029	60
25	Lick		14	May 4.026	68
26	Lick		18	May 12.000	--
27	Lick/s	CO	IV-6	May 2.894	38
28	Lick/s	CO	V-1	May 4.896	96
29	Lick/s	CO	I-7	May 6.902	92
30	Lick/s	CO	II-8	May 7.896	91
31	Lick/s	CO	III-10	May 11.891	46
32	Lick		W205	May 4.977	45
33	Lick	MC1	W212	May 10.979	61
34	Lick	MC2	W222	May 26.726	82
35	Lick	LL	W225	May 28.753	132
36	Lick	LL	W226	May 29.754	142
37	Lick	LL	W228	May 30.750	181
38	Lick	LL	W230	May 31.755	175
39	Lick	LL	W232	June 1.749	136
40	Lick	LL	W234	June 2.748	135
41	Lick	LL	W235	June 3.748	131
42	Lick	LL	W236	June 4.739	94
43	Lick	LL	W237	June 5.749	135
44	Lick	LL	W238	June 6.745	126

Table 7 (Continued)

Figure	Observatory	Instrument	Plate Number	Date 1910	Exposure (minutes)
45	Lick	MC2	W241	June 7.741	120
46	Lick	LL	W243	June 8.743	120
47	Lowell	Voigtl.	1	April 30.973	30
48	Lowell	Voigtl.	4	May 4.956	54
49	Lowell	Voigtl.	5	May 5.952	62
50	Lowell	Voigtl.	6	May 6.950	67
51	Lowell	Voigtl.	7	May 7.952	61
52	Lowell	Voigtl.	8	May 8.950	69
53	Lowell	Voigtl.	9	May 10.951	60
54	Lowell	Voigtl.	10	May 14.953	46
55	Lowell	Voigtl.	11	May 23.726	75
56	Lowell	Voigtl.	12	May 25.625	—
57	Lowell	Tessar	13	May 26.672	64
58	Lowell	Voightl.	14	May 29.717	135
59	Lowell	Voightl.	15	May 31.715	120
60	Lowell	Voightl.	16	June 1.708	120
61	Lowell	Voightl.	17	June 2.722	120
62	Lowell	Voightl.	18	June 5.724	125
63	Lowell	Voightl.	19	June 8.715	124

Table 7a
Objective Prism Cameras

Lick Spectra		
Camera	Dispersion (mm)	Description
LL	Various	Bausch and Lomb lantern lens, 60° flint prism
WH	3.8	Willard 6-inch lens, 15° prism
MC1	5.6	Mills spectrograph camera, 60° crown prism
MC2	22.4	Mills spectrograph camera, 60° flint prism
CO	23.2	Chile objective prism, 60° flint prism

Dispersion is separation in mm between λ 3883 and λ 4737.		
Lowell Spectra		
Camera	Dispersion (mm)	Description
Voigtl.	12	37-mm aperture, 200 mm f.l., 62° Jena glass prism
Tessar	18.5	60-mm aperture, 210 mm f.l., 64° Jena glass prism

Dispersion is separation in mm between λ 3883 and λ 5165.

Table 8
Spectral and Direct Images of Comet Halley 1910 II

Figure	Date	Observatory	Exposure (minutes)
1	1910 May 4.956	Lowell	54
2	1910 May 5.952	Lowell	62
3	1910 May 6.950	Lowell	67
4	1910 May 7.952	Lowell	61
5	1910 May 10.951	Lowell	60

Table 9
Perihelion Dates for Comet Halley*

Year	Month/Day	Year	Month/Day
2061	July 29	837	February 28
1986	February 9	760	May 20
1910	April 20	684	October 2
1835	November 16	607	March 15
1759	March 13	530	September 27
1682	September 15	451	June 28
1607	October 27	374	February 16
1531	August 26	295	April 20
1456	June 9	218	May 17
1378	November 10	141	March 22
1301	October 25	66	January 25
1222	September 28	11 B.C.	October 10
1145	April 18	86 B.C.	August 6
1066	March 20	163 B.C.	November 12
989	September 5	239 B.C.	May 25
912	July 18		

*Table 9 is adopted from the Edberg, International Halley Watch Amateur Observers Handbook, Part I, and the Julian Calendar is used for dates before 1607. The first known recorded observation is 239 B.C. Some minimum Earth-Comet distances are: 837 - 0.04 AU, 1910 - 0.15 AU, and 1985 - 0.42 AU.

Table 10
Orbital Elements^a

Mean Ecliptic and Equinox of 1950.0						
Perihelion Passage (ET) ^b	<i>q</i> (AU)	<i>e</i>	ω	Ω	<i>i</i>	Period (yr)
2061 July 29.1330	0.592785	0.966566	112.0420	58.6876	161.9598	74.66
1986 February 9.6613	0.587096	0.967267	111.8534	58.1531	162.2378	75.96
1910 April 20.1777	0.587189	0.967297	111.7170	57.8467	162.2151	76.08
1835 November 16.4387	0.586542	0.967386	110.6856	56.8025	162.2552	76.27
1759 March 13.0608	0.584447	0.967679	110.6899	56.5287	162.3689	76.89
1682 September 15.2807	0.582608	0.967923	109.2054	54.8522	162.2657	77.41
1607 October 27.5406	0.583615	0.967490	107.5314	53.0535	162.9020	76.06
1531 August 26.0181	0.581190	0.967714	106.9690	52.3362	162.9097	76.38
1456 June 8.4108	0.579688	0.967969	105.8313	51.1483	162.8823	76.99
1378 November 7.6457	0.576205	0.968331	105.3003	50.3055	163.1038	77.61
1301 October 20.3960	0.572718	0.968902	104.5148	49.4451	163.0675	79.03
1222 September 27.5483	0.574263	0.968821	103.8729	48.6011	163.1823	79.04
1145 April 20.2338	0.574836	0.968752	103.7301	48.3505	163.2147	78.90
1066 March 23.2544	0.574559	0.968829	102.5122	46.9300	163.1042	79.14
989 September 7.4221	0.581980	0.967857	101.5350	45.8756	163.3887	77.04
912 July 16.7465	0.580219	0.968026	100.8282	44.9592	163.3007	77.30
837 February 23.1646	0.582424	0.967740	100.1591	44.2450	163.4399	76.71

^aAfter Yeomans, Astronomical Journal, 82, p. 435, 1977.

^bJulian calendar for dates before 1582, Gregorian calendar for post 1582 dates—all dates begin at midnight.

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