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# OGO-4 OBSERVATIONS OF THE 6300A NIGHT AIRGLOW FROM 40°N TO 40°S: A SET OF 19 COLOR MAPS


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CONTAINS ILLUSTRATIONS



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GODDARD SPACE FLIGHT CENTER

GREENBELT, MARYLAND

# OGO-4 OBSERVATIONS OF THE 6300A NIGHT AIRGLOW FROM 40°N to 40°S: A SET OF 19 COLOR MAPS

by

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ABSTRACT

Data for the 6300A line of atomic oxygen from the main body airglow photometer on the OGO-4 satellite have been summarized in a set of 19 maps for various local times at night between August 30, 1967 and January 10, 1968. This report is a supplement to "An Atlas of Low Latitude 6300 [OI] Night Airglow from OGO-4 Observations" by Reed, E.I., W.B. Bowler, and J.E. Blamont, GSFC X-625-72-171 (submitted for publication to J. Geophysical Research). It consists of the 19 color maps and a figure showing magnetic apex coordinates on the same scale.

Data for the 6300A line of atomic oxygen from the OGO-4 main body airglow photometer have been assembled into a set of color maps. Each map indicates the emission rate of the 6300A line between 40°N and 40°S latitude at a particular local time, as compiled from data gathered over a period of 2 to 4 days. Details of local time and data coverage are given in Table 1. A discussion of the observations is found in Reed, Fowler, and Blamont (1972). This set of maps is a supplement to that report.

Magnetic apex coordinates, designed for use in the organization of observations of plasma density in the $F_2$ region in low and middle latitudes, described by VanZandt, Clark, and Warnock (1972) are given in Figure 1 for an altitude of 300 km on the grid scale used for the maps of airglow data.

TABLE 1

| MAP | START MONTH DAY | START TIME | START ORBIT | END MONTH DAY | END TIME | END ORBIT | NO of ORBITS | LOCAL TIME |
|---|---|---|---|---|---|---|---|---|
| 1 | 8/30 | 0844 | 482 | 9/2 | 0537 | 524 | 31 | 0310 |
| 2 | 9/4 | 0254 | 552 | 9/7 | 0619 | 598 | 32 | 0246 |
| 3 | 9/7 | 1049 | 601 | 9/9 | 1345 | 632 | 16 | 0228 |
| 4 | 9/25 | 2219 | 873 | 9/28 | 1100 | 910 | 32 | 0044 |
| 5 | 9/28 | 1847 | 915 | 10/2 | 0617 | 966 | 32 | 0026 |
| 6 | 10/3 | 2102 | 990 | 10/6 | 1929 | 1033 | 35 | 2358 |
| 7 | 10/7 | 1441 | 1045 | 10/10 | 1622 | 1090 | 30 | 2337 |
| 8 | 10/10 | 1917 | 1092 | 10/13 | 1111 | 1131 | 27 | 2320 |
| 9 | 10/22 | 2120 | 1270 | 10/26 | 0708 | 1320 | 33 | 2210 |
| 10 | 10/26 | 1812 | 1327 | 10/30 | 0400 | 1377 | 34 | 2146 |
| 11 | 10/30 | 1957 | 1387 | 11/1 | 1438 | 1413 | 14 | 2127 |
| 12 | 11/2 | 1128 | 1426 | 11/5 | 0635 | 1467 | 26 | 2107 |
| 13 | 11/18 | 0027 | 1655 | 11/20 | 1757 | 1695 | 13 | 1932 |
| 14 | 11/22 | 2143 | 1727 | 11/25 | 0033 | 1758 | 30 | 1908 |
| 15 | 11/27 | 0240 | 1789 | 11/30 | 0104 | 1832 | 31 | 1838 |
| 16 | 12/25 | 2332 | 2215 | 12/28 | 1522 | 2254 | 29 | 0336 |
| 17 | 12/29 | 0403 | 2262 | 12/30 | 2243 | 2288 | 19 | 0318 |
| 18 | 1/1 | 2312 | 2318 | 1/5 | 2020 | 2375 | 26 | 0246 |
| 19 | 1/6 | 0052 | 2378 | 1/10 | 0746 | 2441 | 41 | 0219 |

Periods in 1967-8 covered by the set of 19 maps. Start and end times are given by month, day of month, hour and minute of Universal Time (GMT). Local time in hours and minutes is average local time at the geodetic equator. The number of orbits used in the preparation of each map is stated. Map 5, 10, 14, and 17 are reproduced with this paper.

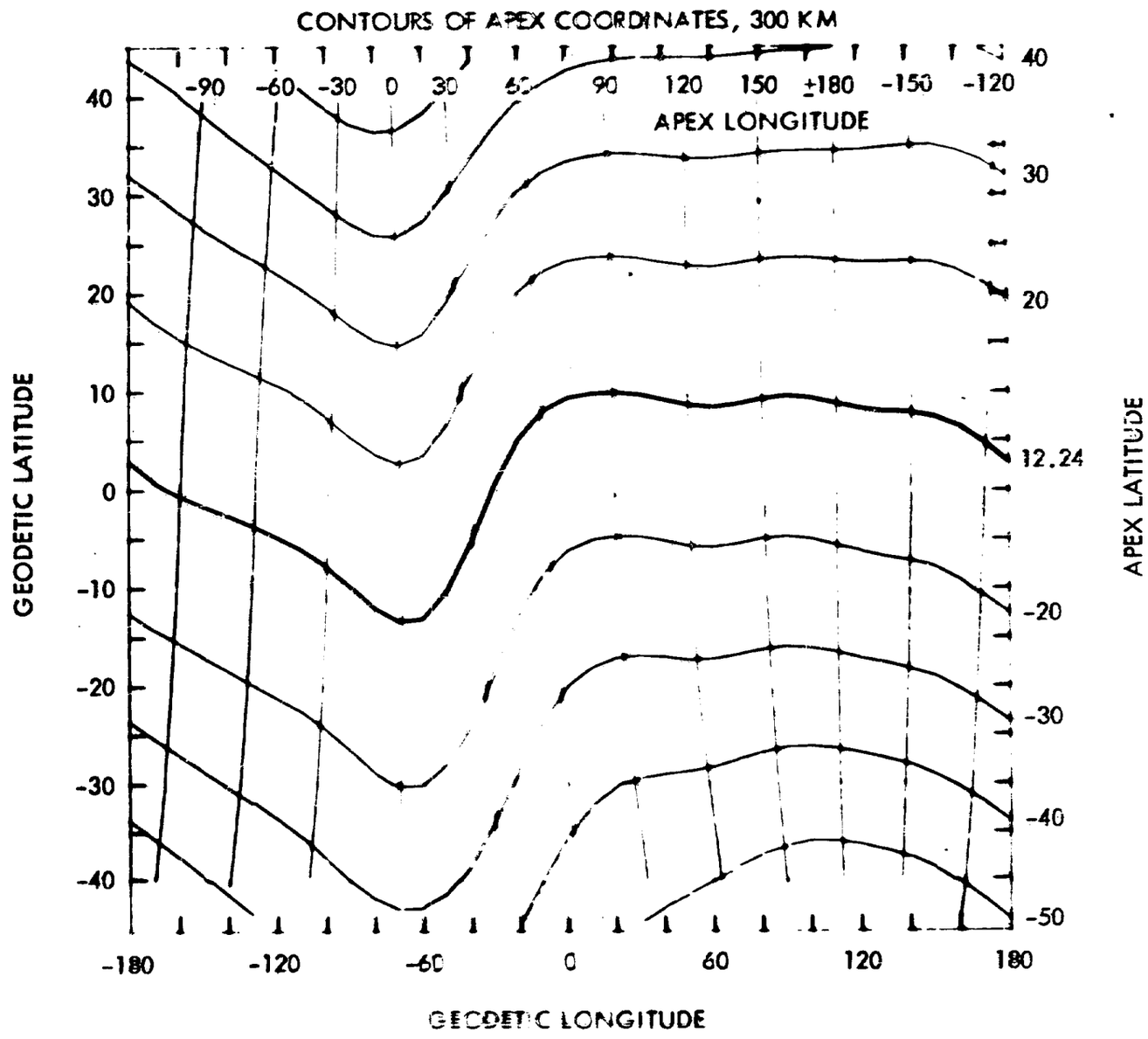
## REFERENCES

Reed, E.I., W.B. Fowler and J.E. Blamont, "An Atlas of Low Latitude 6300A [OI] Night Airglow from OGO-4 Observations", GSFC X-625-71-171, 1972. Submitted for publication to J. Geophys. Res.

VanZandt, T.E., W.L. Clark and J.M. Warnock, "Magnetic Apex Coordinates: A Magnetic Coordinate System for the Ionospheric $F_2$ Layer", J. Geophys. Res., 77, 2406-2411, 1972.

## FIGURE CAPTION

Figure 1. Magnetic Apex Coordinates at an altitude of 300 km.



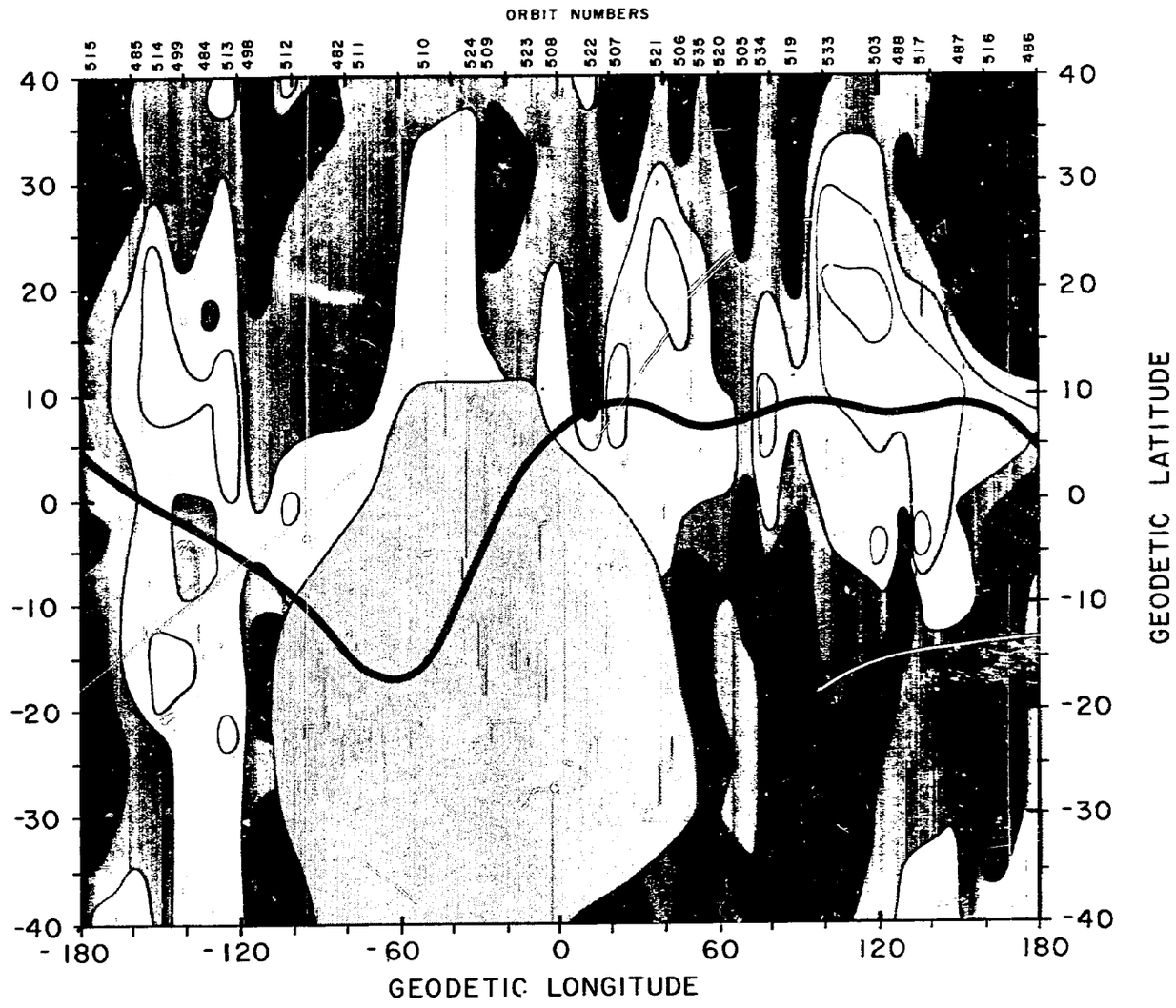

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

AIRGLOW 6300 Å

LOCAL TIME
0310

AUG. 30 - SEPT. 2
1967

RAYLEIGHS
- >800
- 400-800
- 200-400
- 100-200
- 50-100
- 25-50
- <25
- NO DATA



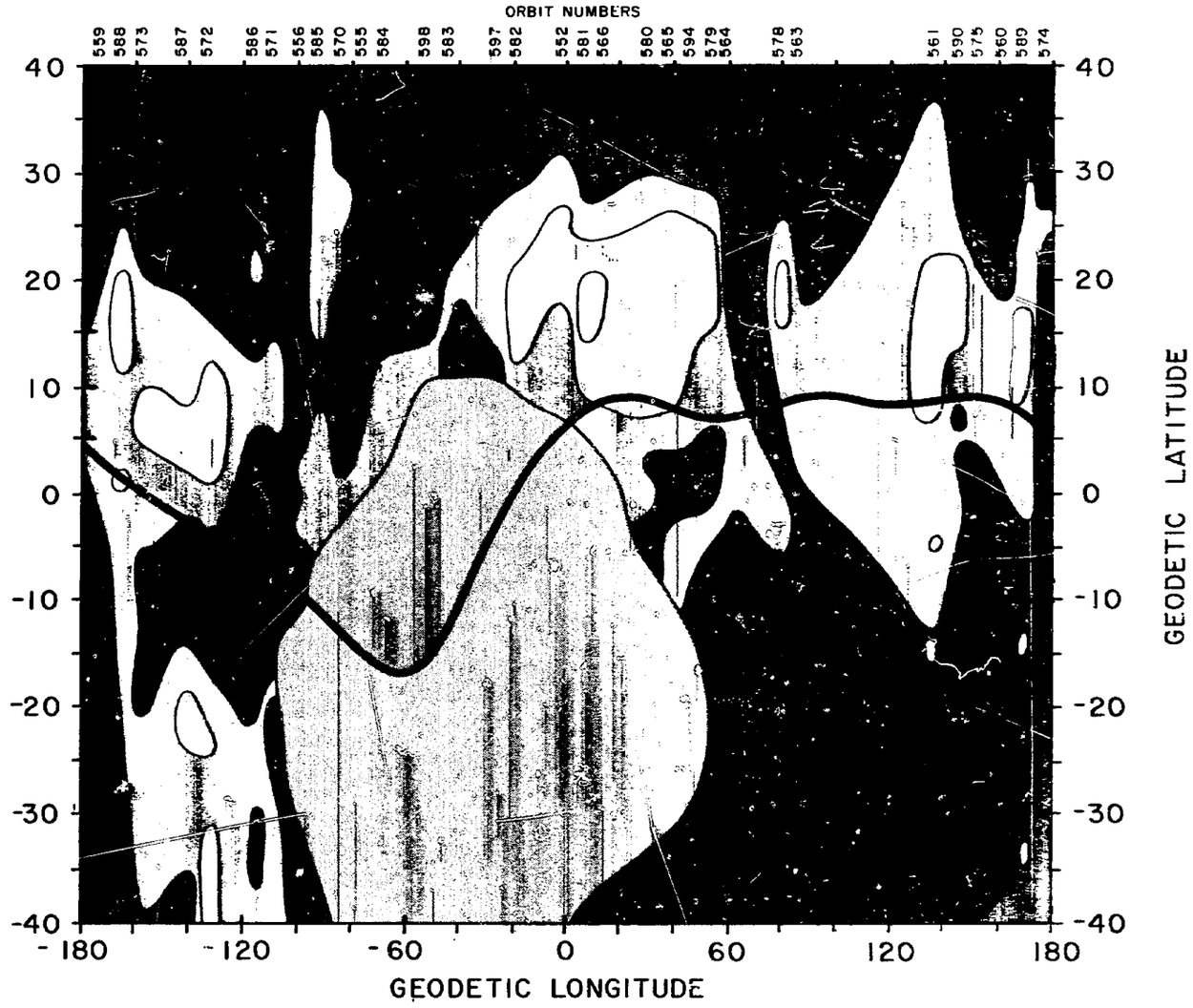

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

AIRGLOW 6300 Å

LOCAL TIME
0246

SEPT. 3 - SEPT. 7
1967

RAYLEIGHS
- >800
- 400-800
- 200-400
- 100-200
- 50-100
- 25-50
- <25
- NO DATA

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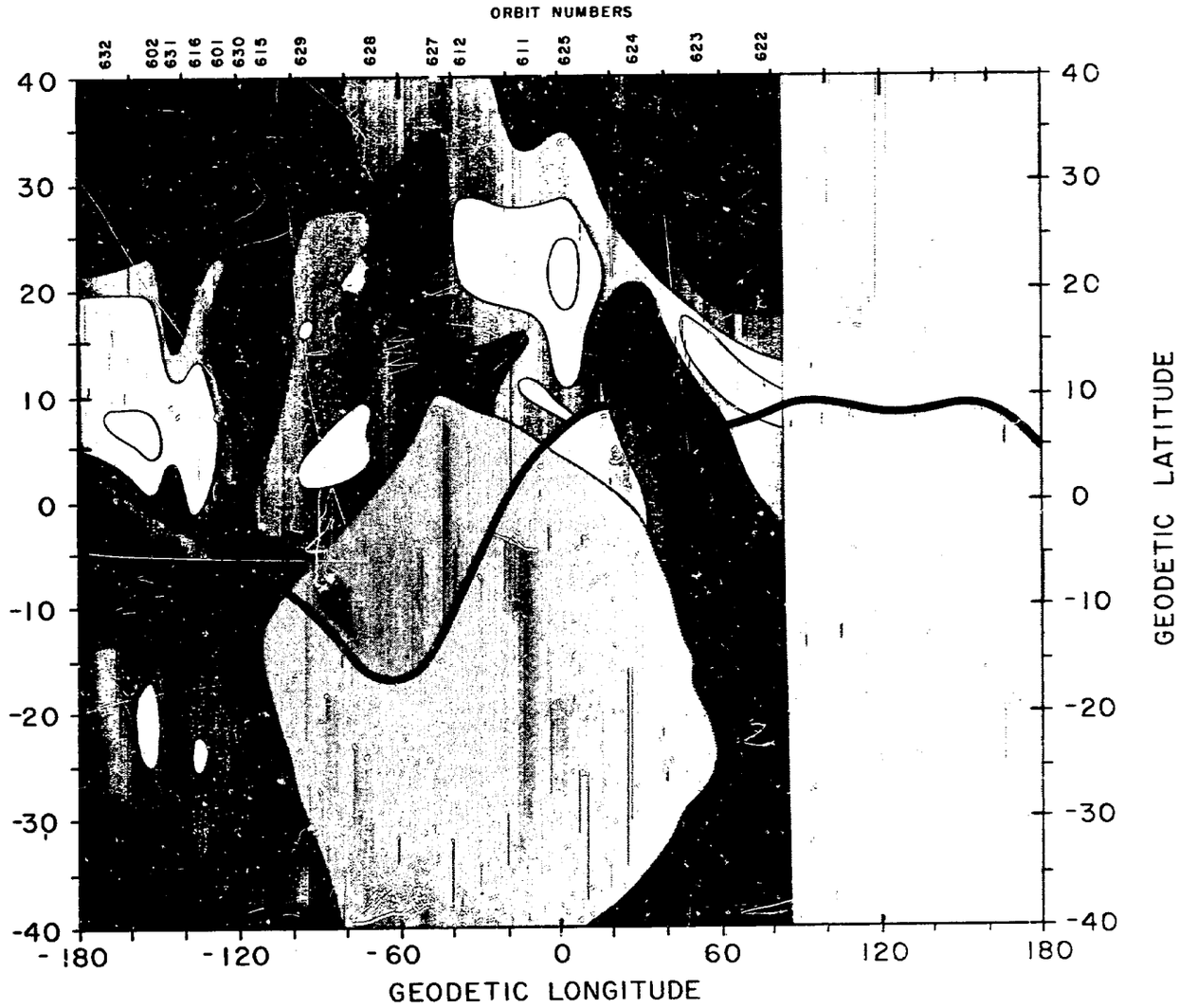
AIRGLOW 6300 Å

LOCAL TIME
0228

SEPT. 7 - SEPT. 9
1967

RAYLEIGHS
- > 800
- 400-800
- 200-400
- 100-200
- 50-100
- 25-50
- < 25
- NO DATA

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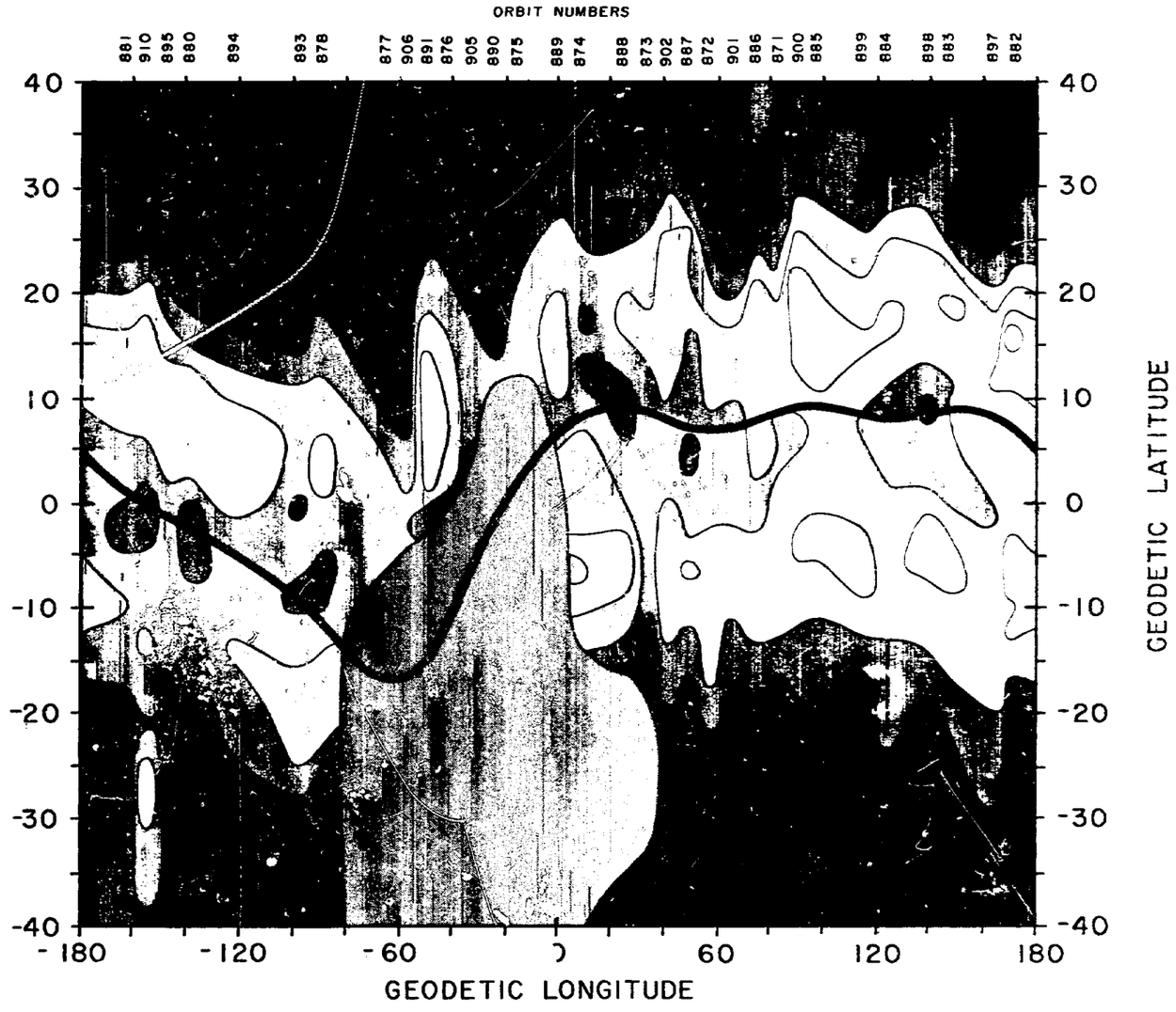
AIRGLOW 6300 Å

LOCAL TIME
0044

SEPT. 25 - SEPT. 28
1967

RAYLEIGHS
- > 800
- 400 - 800
- 200 - 400
- 100 - 200
- 50 - 100
- 25 - 50
- < 25
- NO DATA



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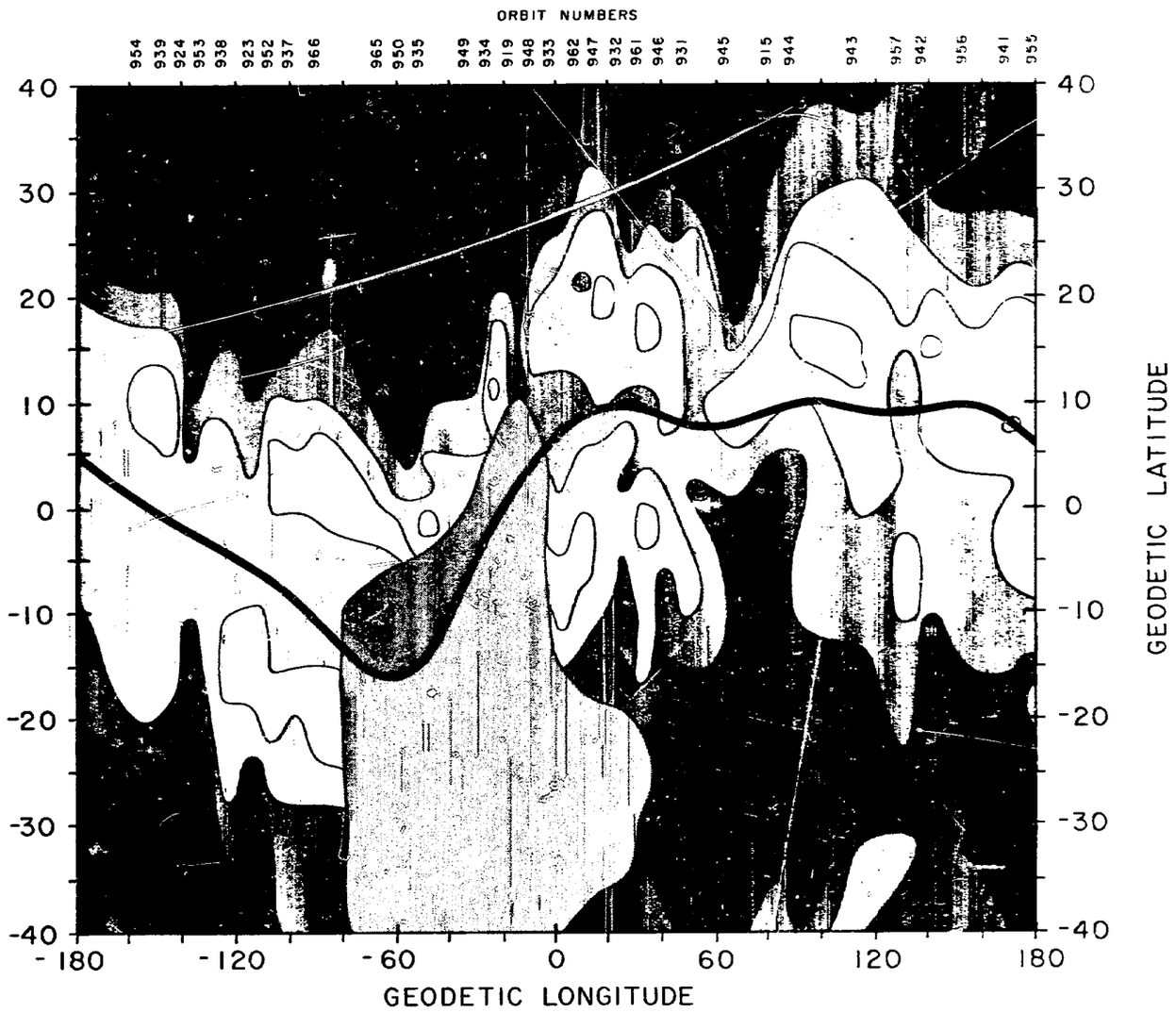
## AIRGLOW 6300 Å

LOCAL TIME
0026

SEPT. 28-OCT. 2
1967

RAYLEIGHS
- >800
- 400-800
- 200-400
- 100-200
- 50-100
- 25-50
- <25
- NO DATA



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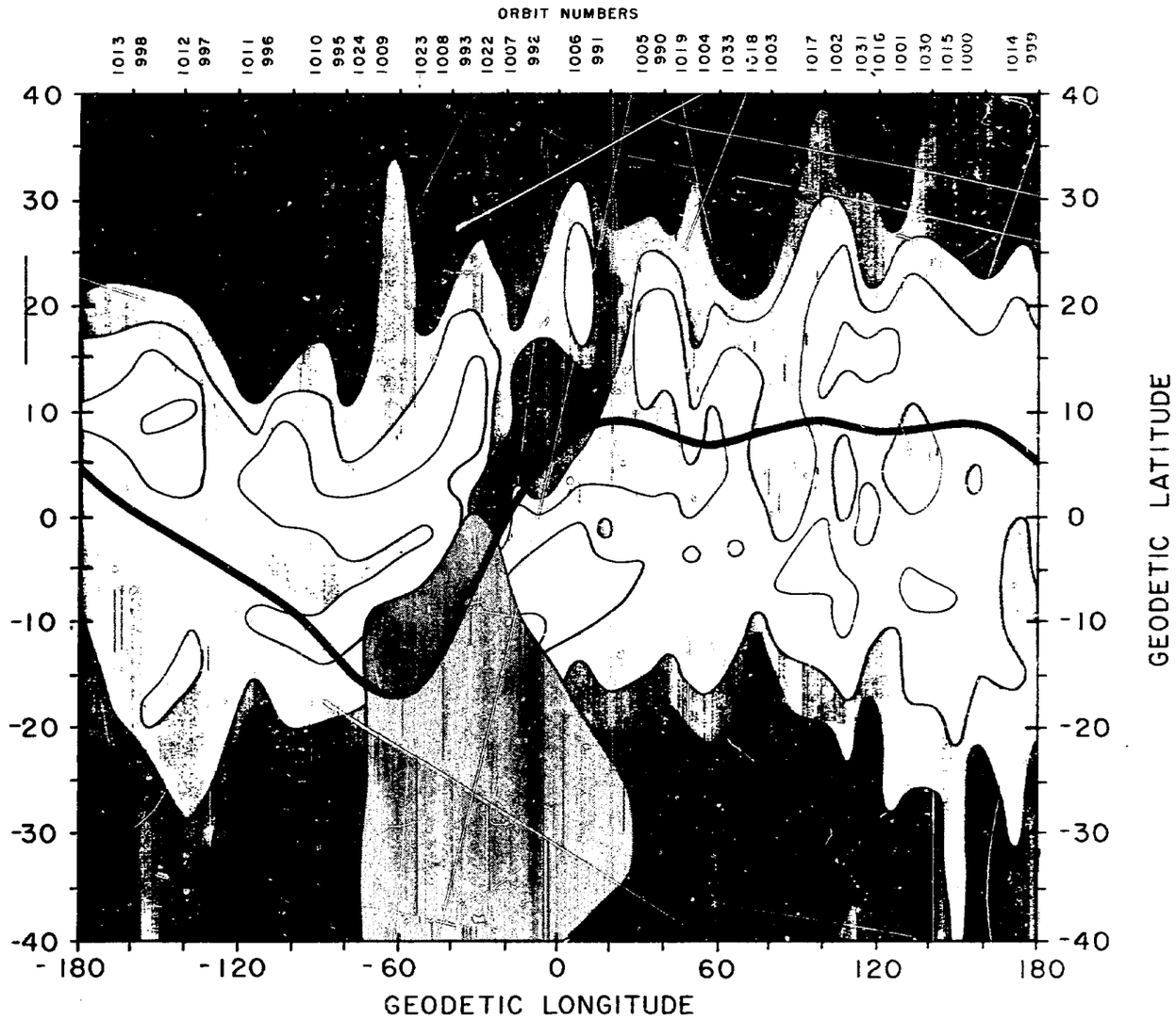
## AIRGLOW 6300 Å

LOCAL TIME
2358

OCT. 3 - OCT. 7
1967

RAYLEIGHS
- > 800
- 400 - 800
- 200 - 400
- 100 - 200
- 50 - 100
- 25 - 50
- < 25
- NO DATA



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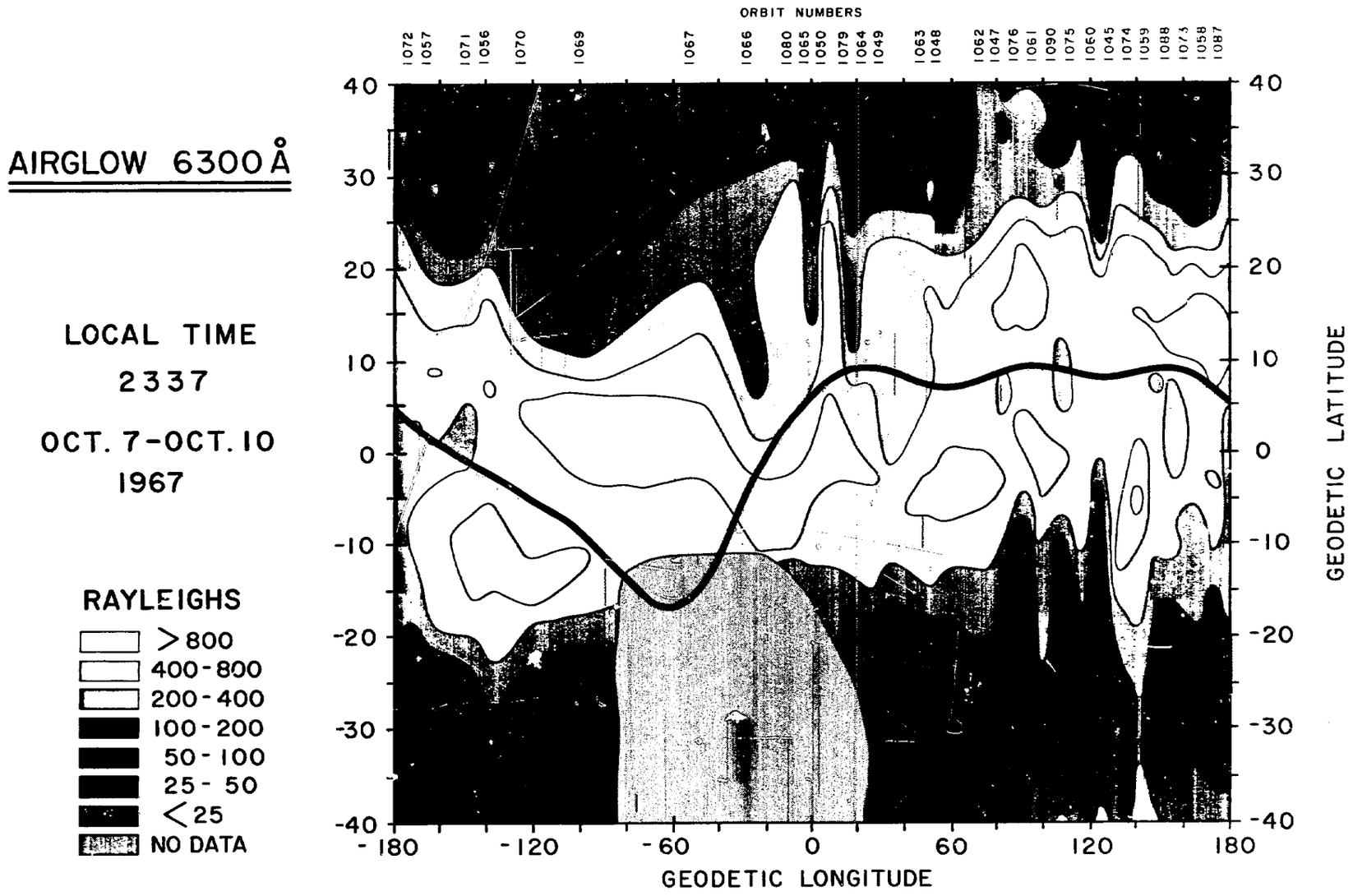

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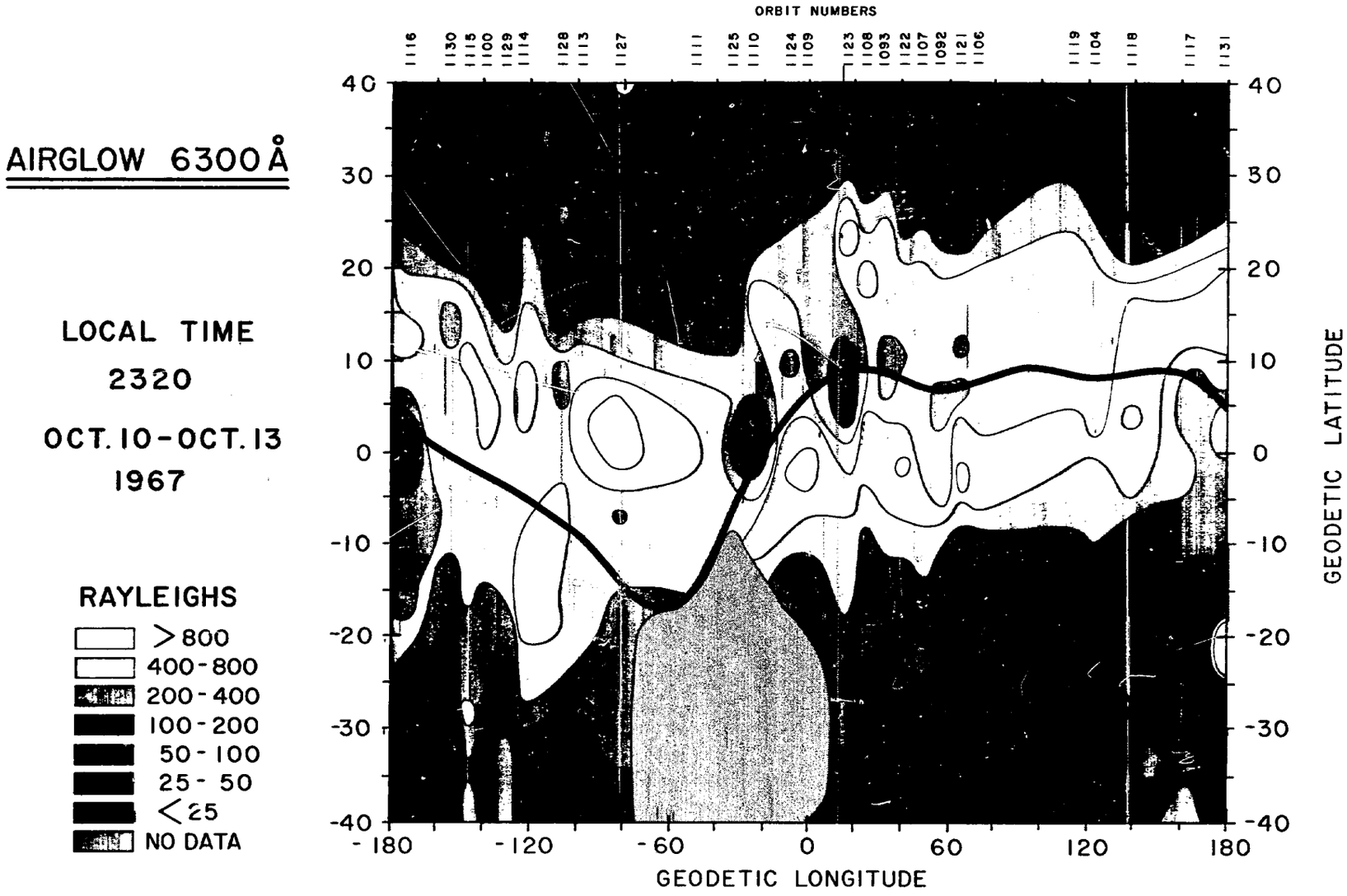

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AIRGLOW 6300 Å

LOCAL TIME

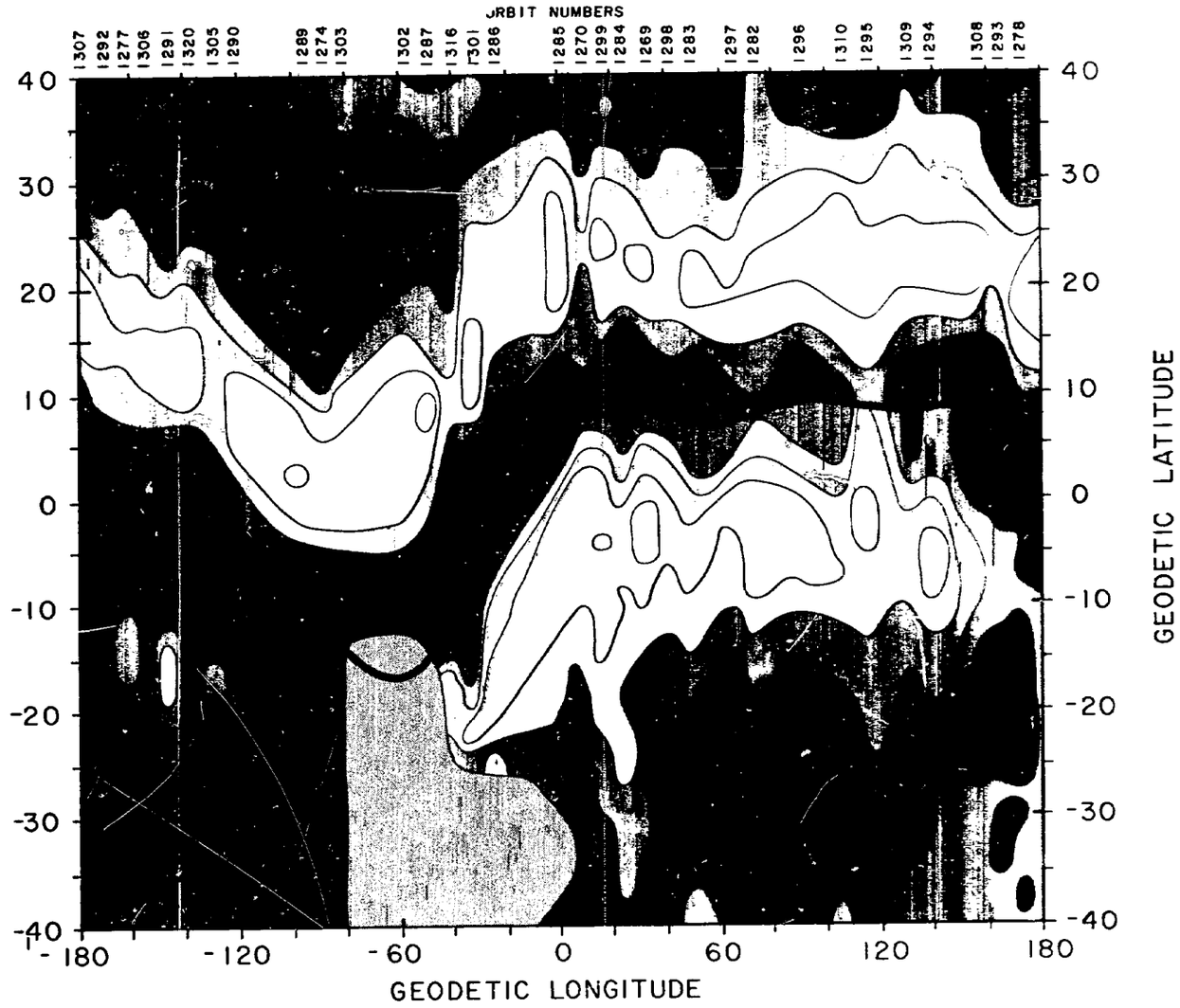
2210

OCT. 22 - OCT. 26

1967

RAYLEIGHS

- > 800
- 400 - 800
- 200 - 400
- 100 - 200
- 50 - 100
- 25 - 50
- < 25
- NO DATA



AIRGLOW 6300 Å

LOCAL TIME

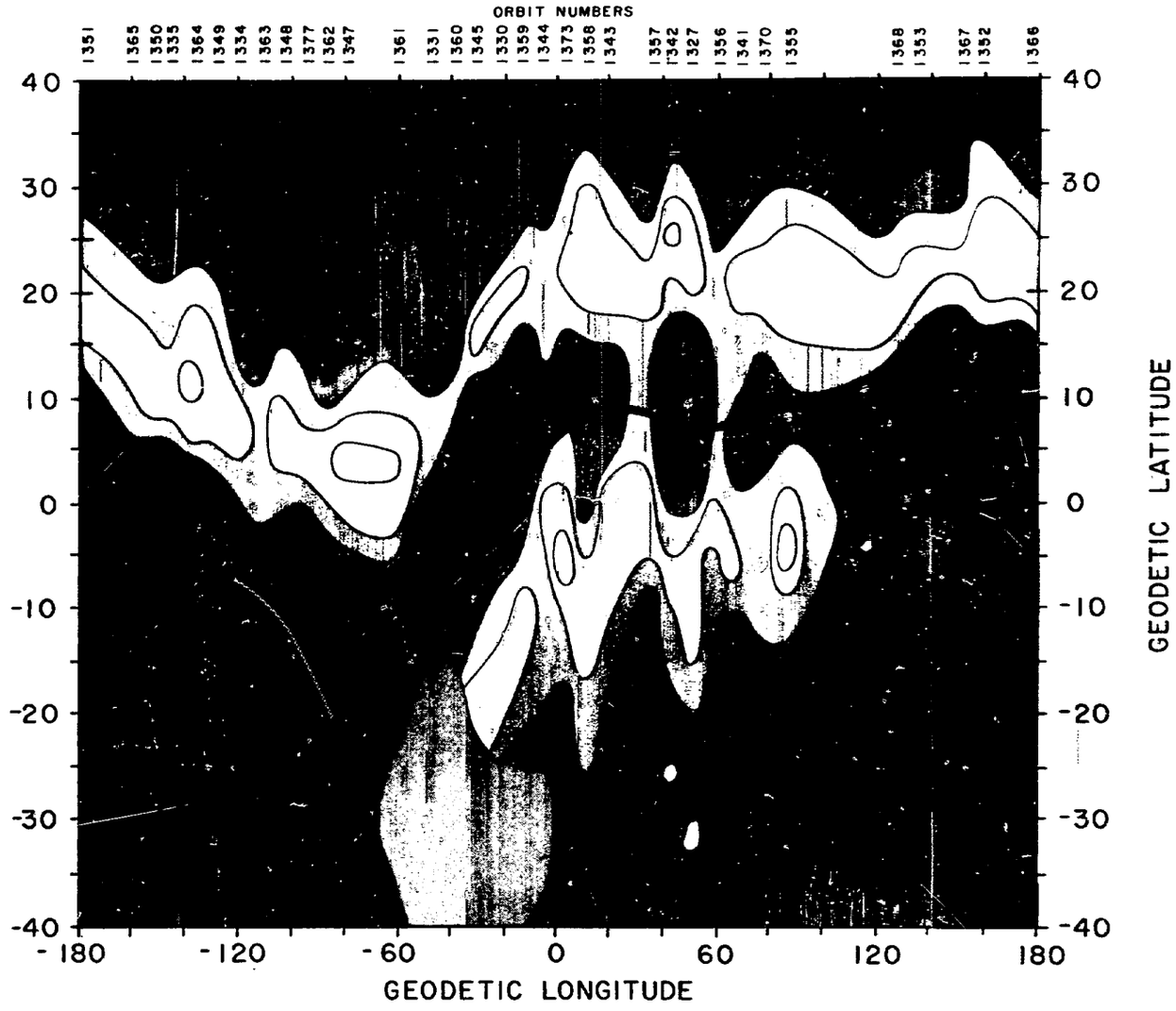
2146

OCT. 26 - OCT. 30

1967

RAYLEIGHS

- > 800
- 400 - 800
- 200 - 400
- 100 - 200
- 50 - 100
- 25 - 50
- < 25
- NO DATA

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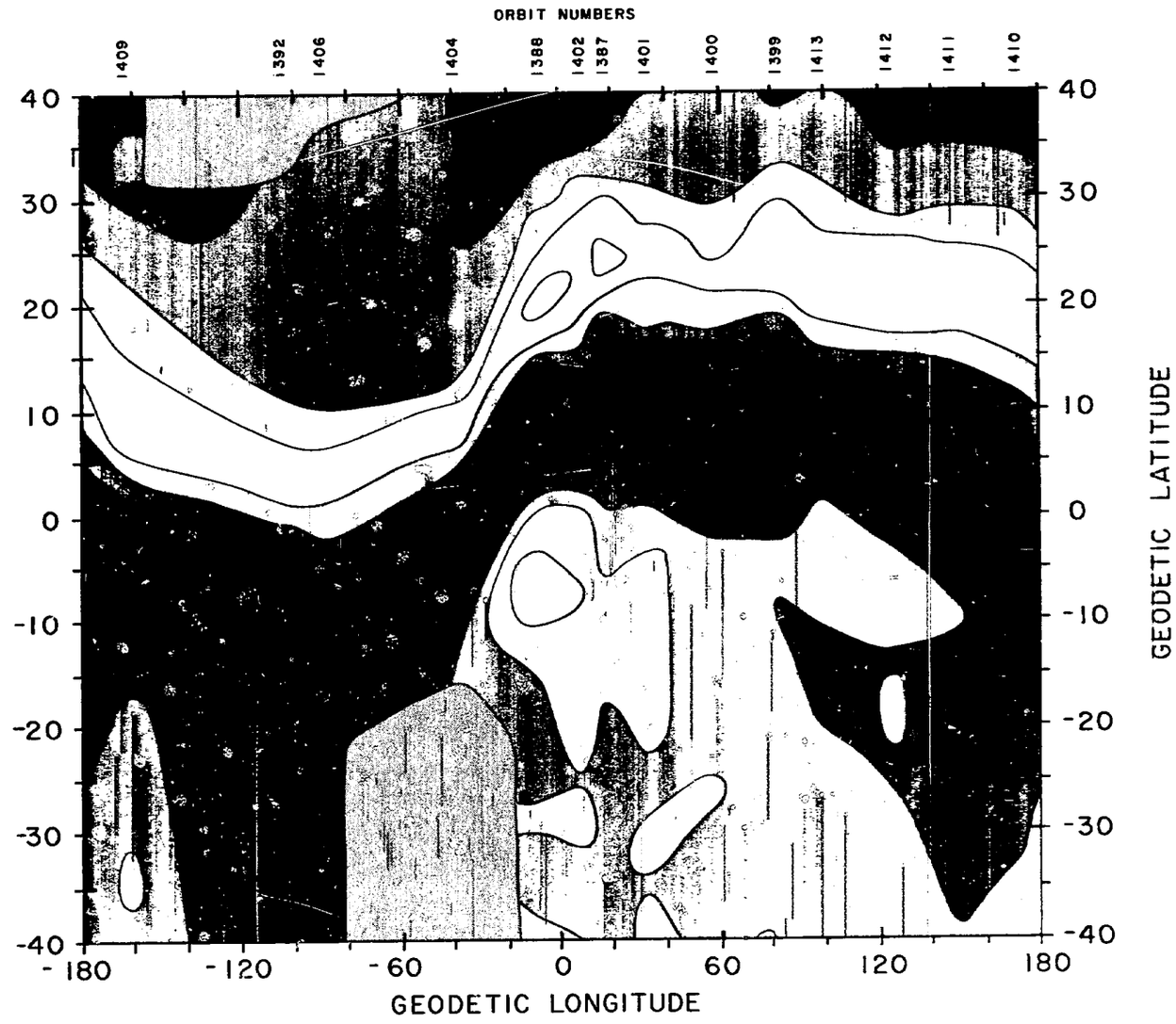
AIRGLOW 6300 Å

LOCAL TIME
2127

OCT. 30-NOV. 1
1967

RAYLEIGHS
- >800
- 400-800
- 200-400
- 100-200
- 50-100
- 25-50
- <25
- NO DATA



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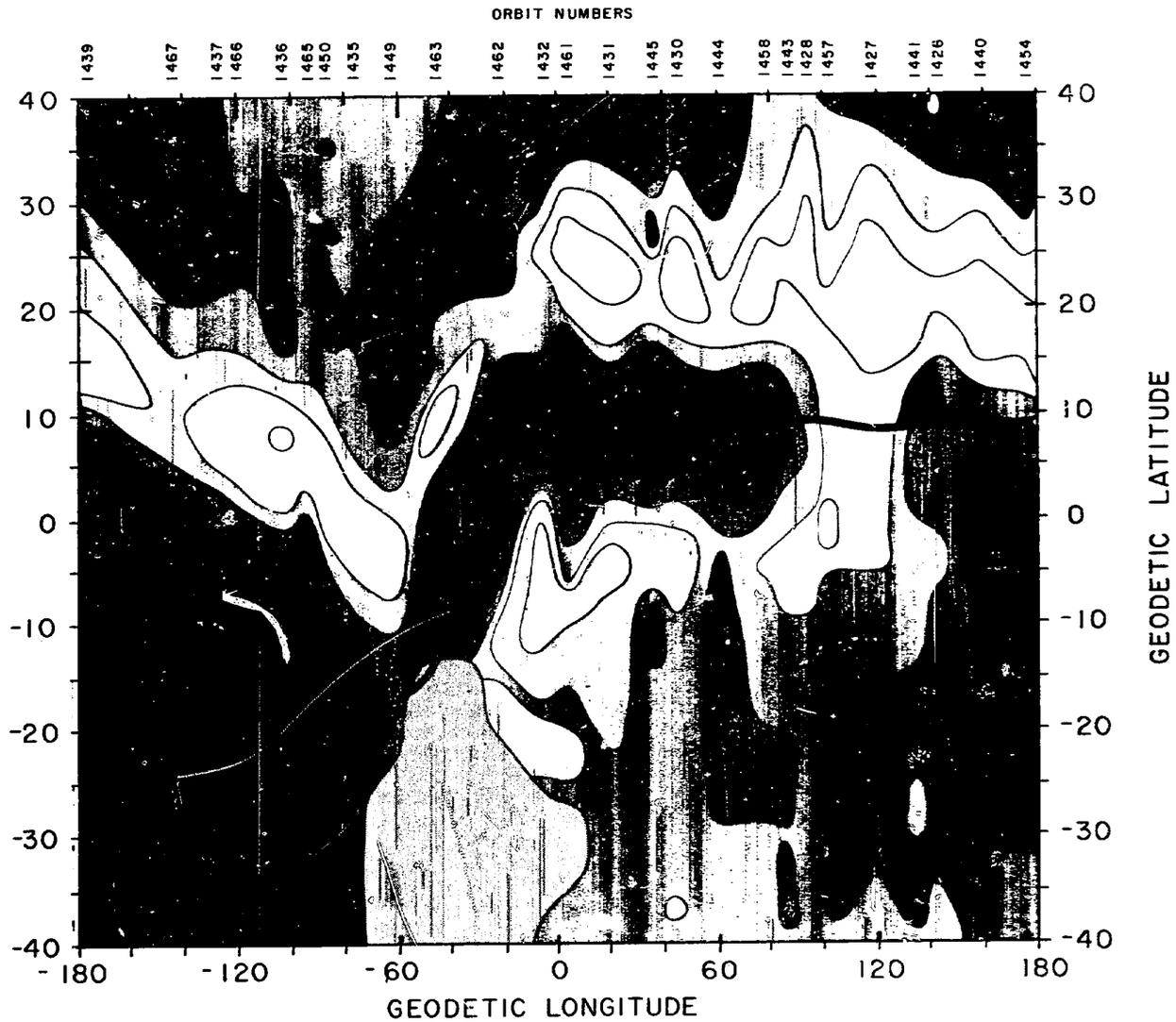
AIRGLOW 6300 Å

LOCAL TIME
2107

NOV. 2-NOV. 5
1967

RAYLEIGHS
- > 800
- 400-800
- 200-400
- 100-200
- 50-100
- 25-50
- < 25
- NO DATA



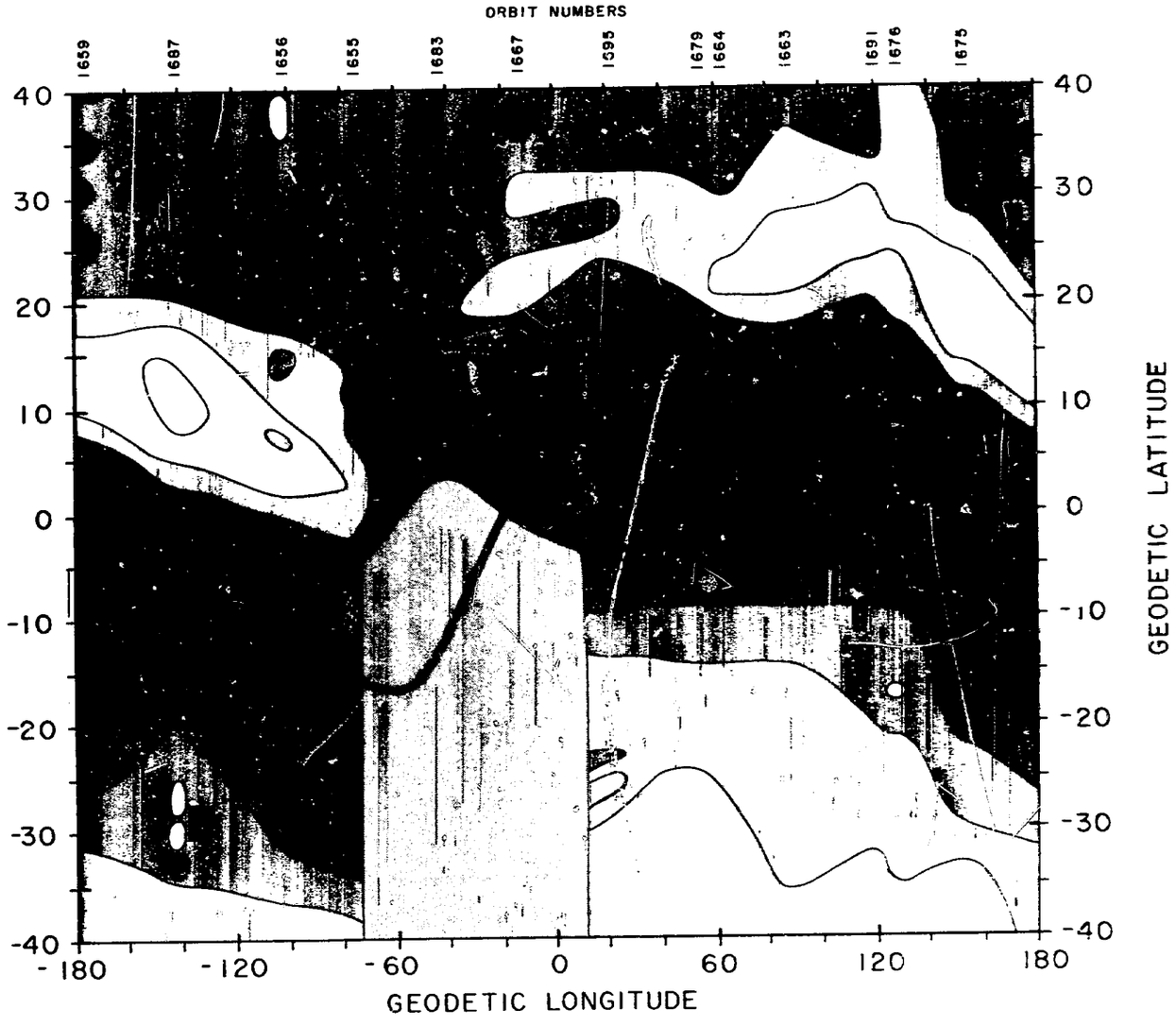
REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

AIRGLOW 6300 Å

LOCAL TIME
1932

NOV. 18 - NOV. 21
1967

RAYLEIGHS
- > 800
- 400 - 800
- 200 - 400
- 100 - 200
- 50 - 100
- 25 - 50
- < 25
- NO DATA



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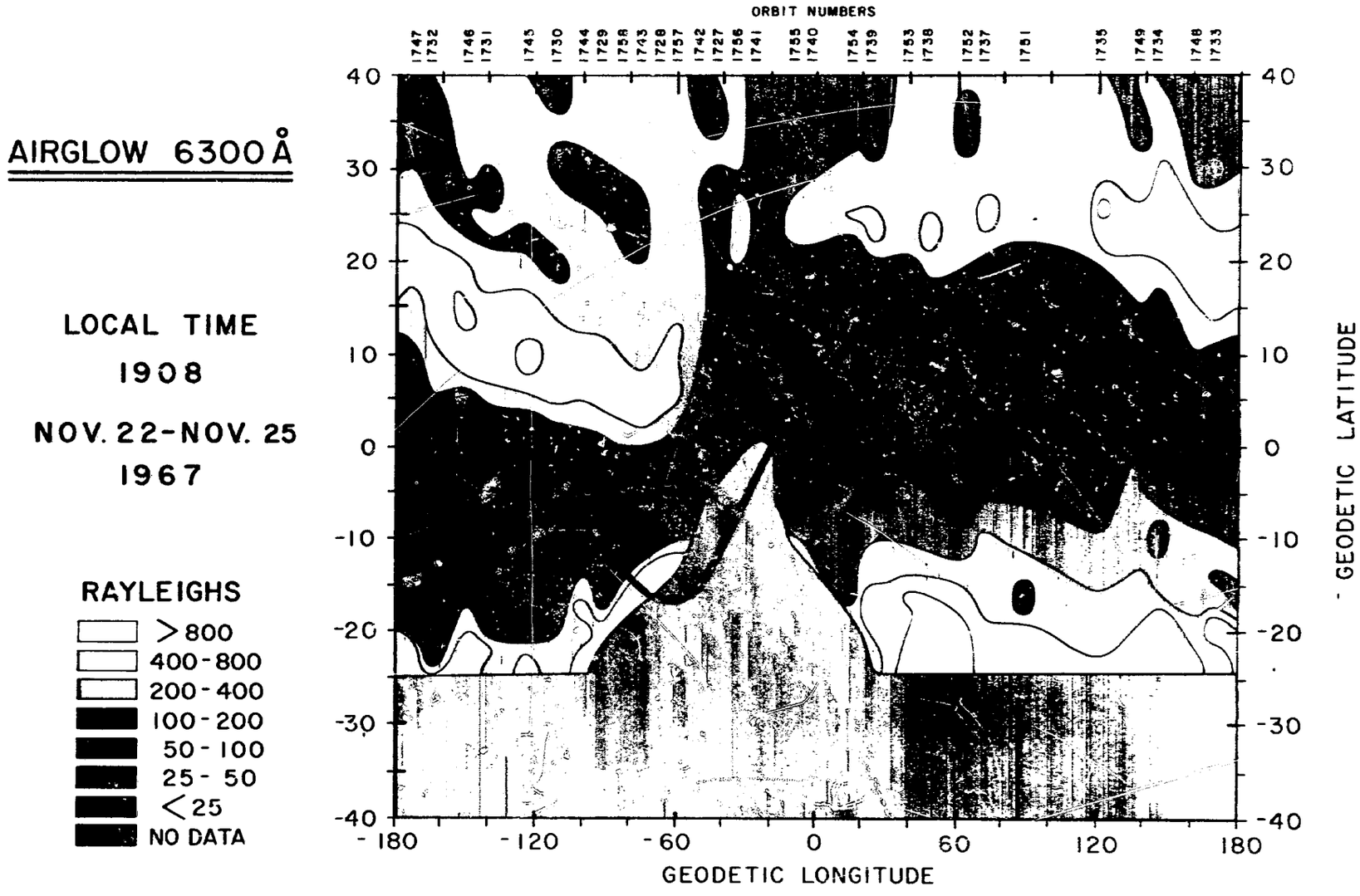

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## AIRGLOW 6300 Å

LOCAL TIME

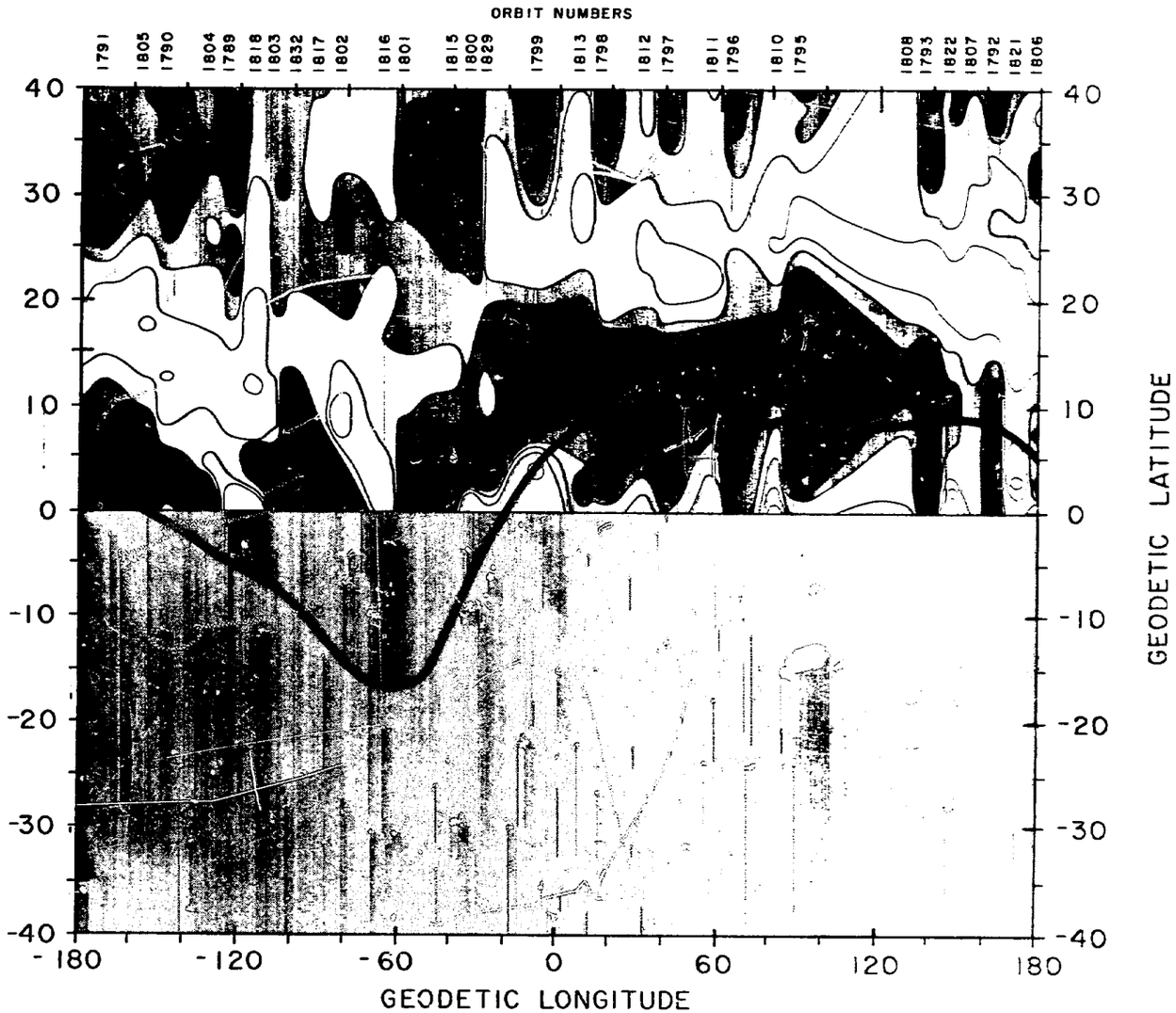
1838

NOV. 27 - NOV. 30

1967

RAYLEIGHS

- > 800
- 400 - 800
- 200 - 400
- 100 - 200
- 50 - 100
- 25 - 50
- < 25
- NO DATA

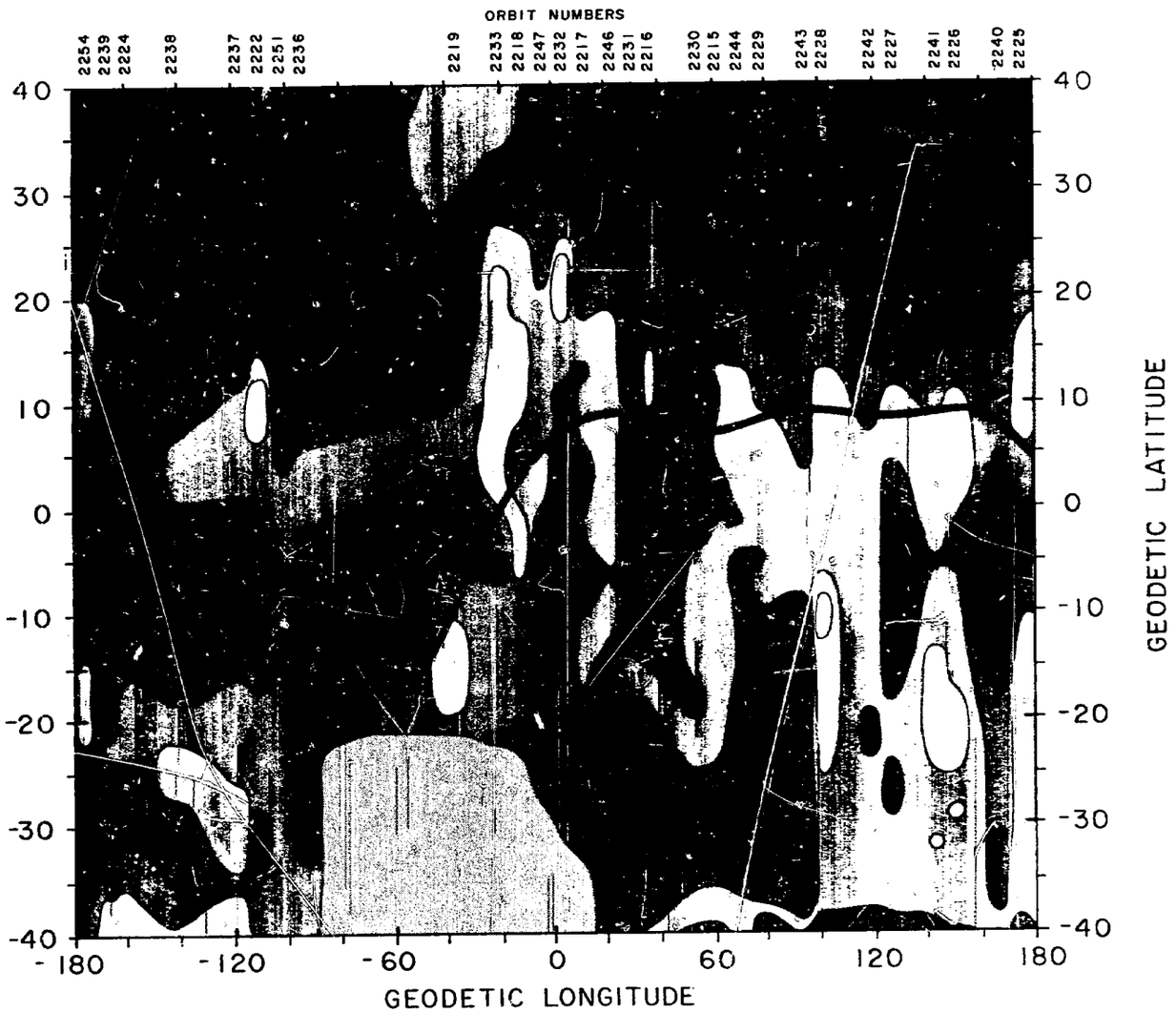


AIRGLOW 6300 Å

LOCAL TIME
0336

DEC. 25-DEC. 28
1967

RAYLEIGHS
- >800
- 400-800
- 200-400
- 100-200
- 50-100
- 25-50
- <25
- NO DATA

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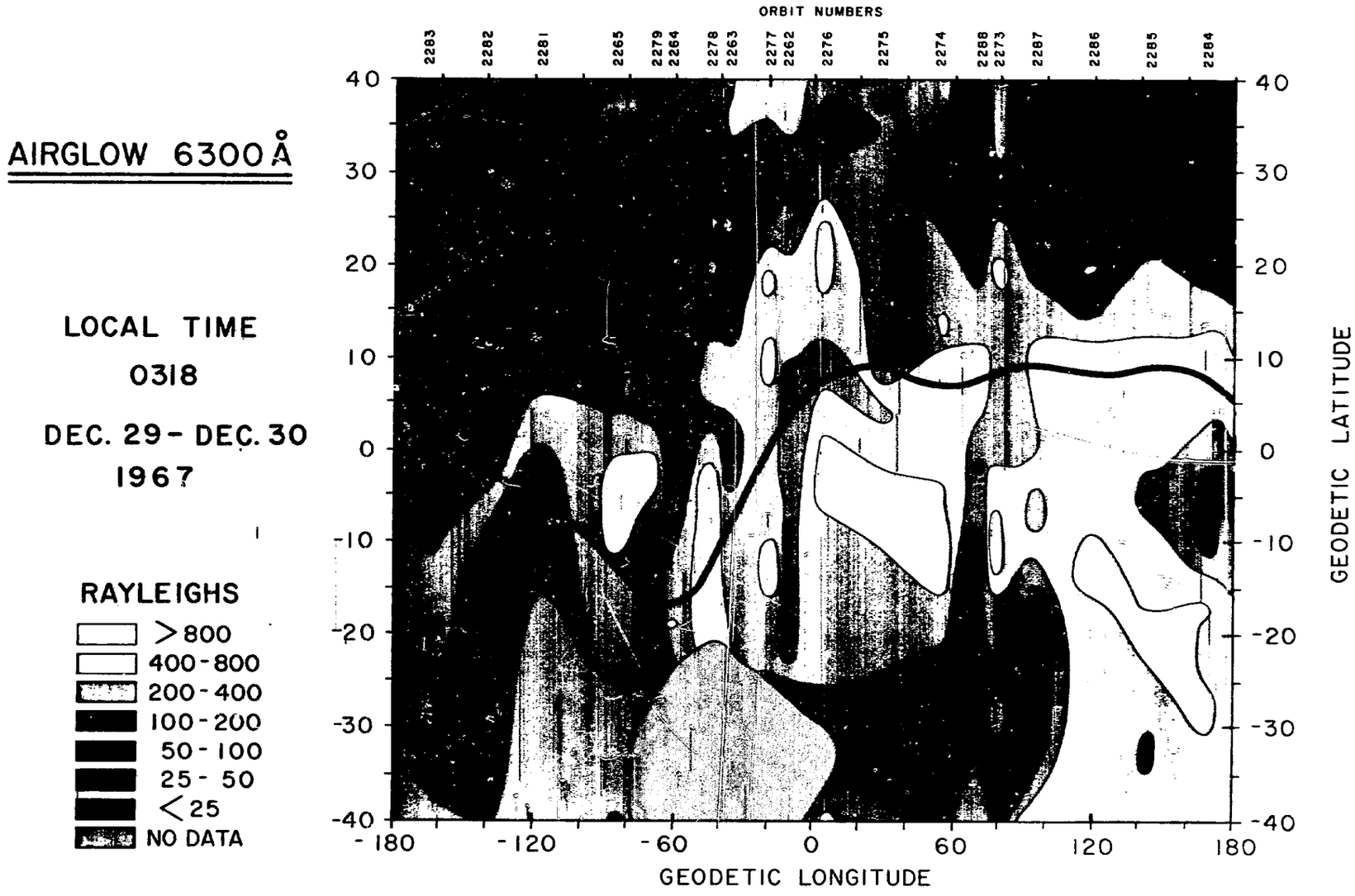
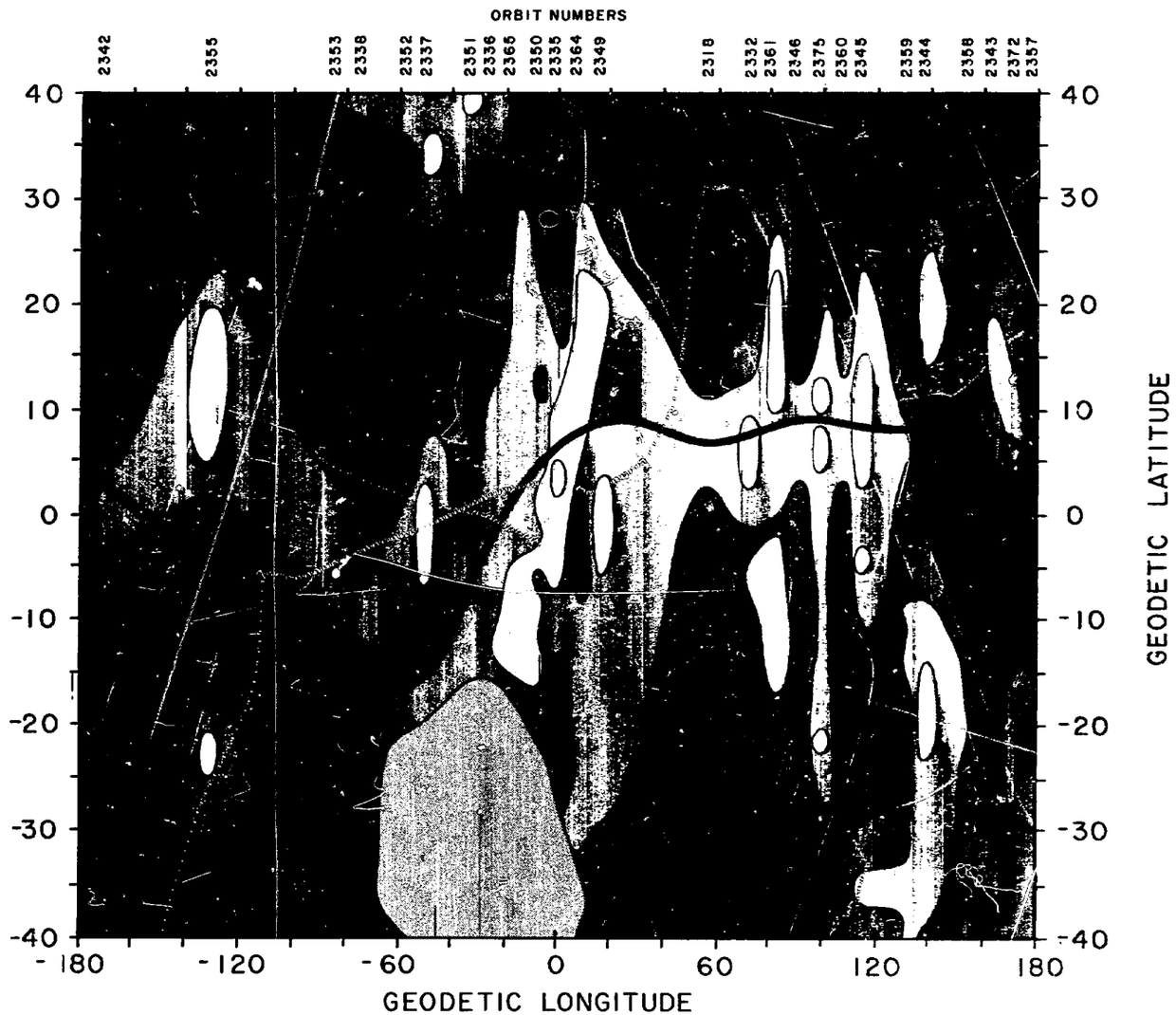


AIRGLOW 6300 Å

LOCAL TIME
0246

JAN. 1 – JAN. 5
1968

RAYLEIGHS
- > 800
- 400 - 800
- 200 - 400
- 100 - 200
- 50 - 100
- 25 - 50
- < 25
- NO DATA

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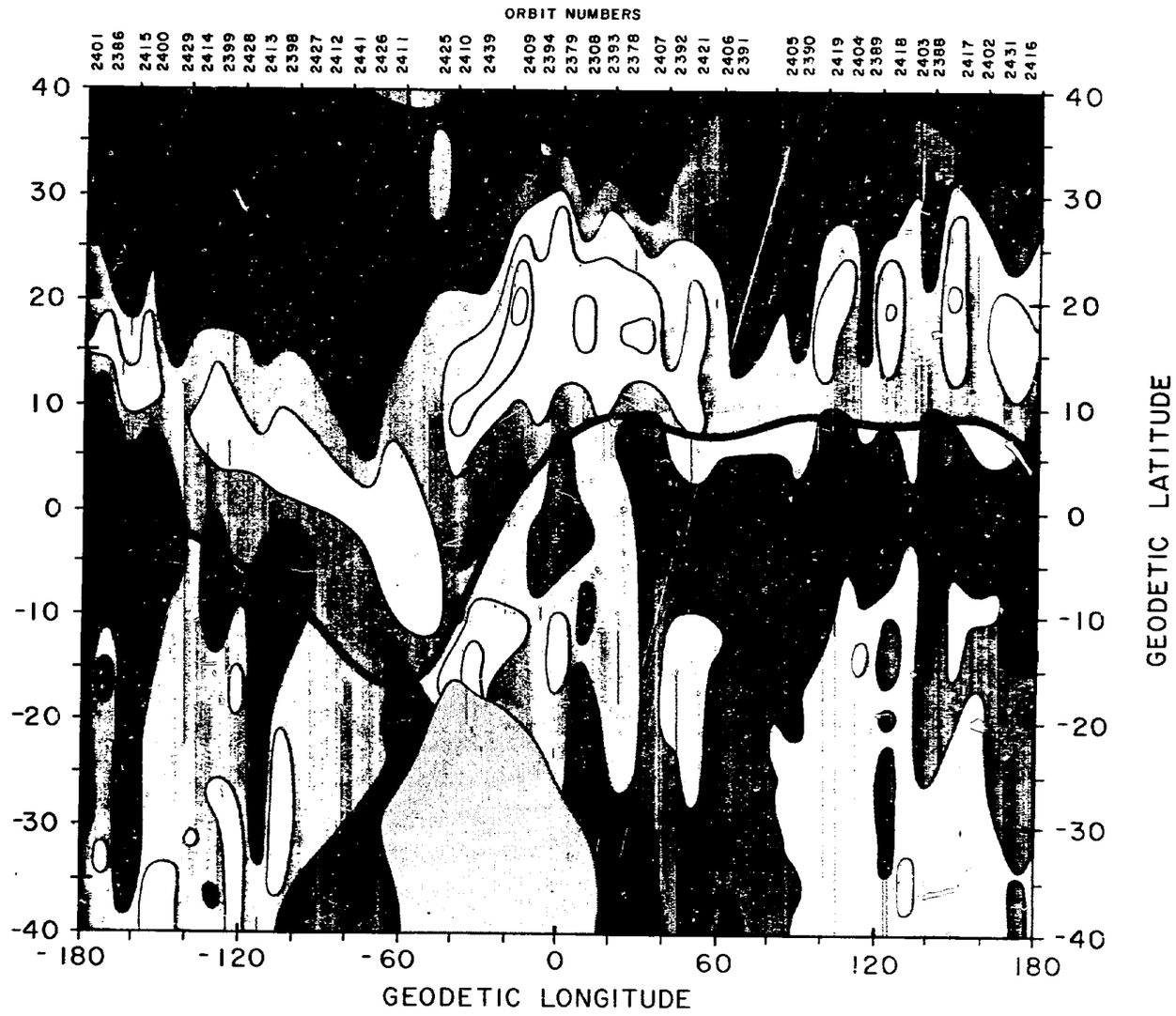
## AIRGLOW 6300 Å

LOCAL TIME
0219

JAN.6 - JAN.10
1968

RAYLEIGHS
- > 800
- 400 - 800
- 200 - 400
- 100 - 200
- 50 - 100
- 25 - 50
- < 25
- NO DATA