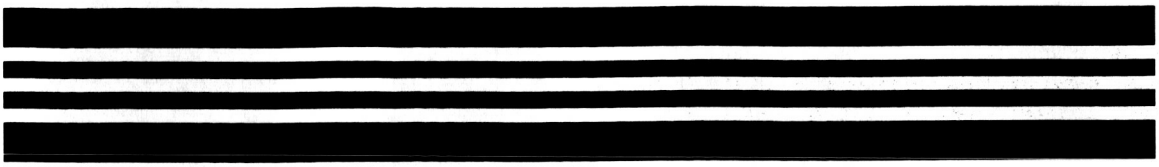

Insert into Running Workflow

GRAYSCALE NAME:

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HARDCOPY NAME:

1967022121

SEMIANNUAL PROGRESS REPORT NO. 6

NsG 563

William P. Hirst

1 December 1966 – 31 May 1967

Smithsonian Institution
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Semiannual Progress Report No. 6 NsG 563

1 December 1966 – 31 May 1967

Prepared by William P. Hirst

In accordance with the requirements of the grant document and as further detailed in NASA letter SC-NsG-563 dated 13 April 1964, the following report of activities for the period 1 December 1966 through 31 May 1967 is submitted.

The arrangement whereby Moonwatch receives decay predictions from NORAD has worked satisfactorily apart from some slight disruption during NORAD's change of quarters.

The Volunteer Flight Officers Network organized by Denver Moonwatch continues to expand. Frequent reports are received from observers in this Network.

Only one sighting of a decaying satellite from the ground has been reported during the period under review.

A special effort was made to obtain observations of 66-114 A (Biosat A) during and immediately prior to decay, but without success.

I Predictions

The receipt of predictions from Space Defense Center was somewhat disrupted during the move from Colorado Springs to Cheyenne Mountain, but not seriously. Present high solar activity is making it difficult to predict decays with any confidence more than 5 or 6 hours ahead. Owing to unavoidable communication delays, this has sometimes caused predictions to reach

the observers too late. This happened when 67-12 B was coming in: In fact, no predictions at all were available and the decaying object was only seen by accident. (See below.)

In the 6 months covered by this report, there have been 162 announced decays. Of these, SAO predicted 28, of which 15 decayed within the estimated uncertainty of the prediction. NORAD predicted 47, of which 40 decayed within the uncertainty bracket. Full details of these predictions will be found in the Appendix.

II Geographical Coverage

Several new Moonwatch teams have been recruited, some of them in areas not previously covered. There is now a total of 160 teams, in 23 countries (including the U. S. A.).

The Volunteer Flight Officers Network, organized by Denver Moonwatch, now has 66 airlines participating, with headquarters in 36 countries. It is estimated that these cover nearly 2 million unduplicated air miles and that about 30, 000 crew members are involved.

III Communications

The situation is substantially unchanged since the last report was submitted a year ago.

IV Observations

Only one decay, that of 67-12 B, has been reported seen from the ground. As stated above, this was not predicted and was seen by accident by Van Nuys Moonwatch.

This decay was also seen by several members of the VFON.

There were, in all, 41 reports of sightings of 14 decaying satellites by flight personnel in the last 6 months. A further 34 sightings of doubtful objects are at present being investigated.

No positive observations of Biosat A (66-114 A) were reported, in spite of careful search by many observers. The satellite is known to have crossed the West coast of Australia. A negative report from Adelaide Moonwatch, members of which team were watching under clear skies, makes it appear probable that it did not reach the East coast of the continent.

V Instrumentation

A new type of altaz mount has been distributed to selected Moonwatch teams. This mount allows the telescope to be moved quickly in any desired direction. It is therefore well suited to the observation of rapidly moving objects such as decaying satellites.

APPENDIX

Satellite	SAO		NORAD		ACTUAL	
	Pred. on Prediction	±	Pred. on Prediction	±	Time	±
66-104G			D 1/0829 D 1/1542	0030	D 1/1443	0010
66-51A			3/0705 3/1503	0130	3/1525	0010
66-36A	Nov. 25 D 3/1900	1200	2/1745 3/0403	0045	3/0403	0010
66-61A	Dec. 3 11/0000	1200	10/1617 10/2202	0100	10/2148	0015
66-108B			10/0744 10/1048	0030	10/1034	0015
65-52A	Dec. 13 18/0900	2400	18/1945 18/2325	0100	18/2315	0015
66-116PT			23/0308 23/0703	0045	23/0640	0010
66-103A			23/0848 23/1226	0130	23/1243	0110
66-115B			27/1750 28/1218	0600	28/1109	0030
66-65A			29/1621 29/1822	0100	29/1859	0003
66-80A			30/0115 30/0834	0100	30/0730	0015
66-99C	Dec. 25 J 1/0700	2400	31/1215 31/1703	0100	31/1703	0003
66-99B	Jan. 1 5/1600	1200	J 4/2329 J 5/0338	0100	J 5/0325	0012
66-99A	Jan. 1 10/0000	2400	9/0534 9/0957	0200	9/1211	0030
66-114C			10/0458 10/0924	0200	10/0832	0012
66-114D	Jan. 5 11/0500	1200	10/0458 10/1312	0200	10/1327	0020
66-99D	Jan. 5 10/2000	2400	11/0001 11/0507	0100	11/0440	0010
66-114B			22/0732 22/1028	0200	22/1149	0030
67-04B			27/2106 28/0126	0200	28/0051	0010
62BT5	Feb. 1 F 5/1800	1200	F 5/1344 F 5/1514	0045	F 5/1507	0020
62BT1	Feb. 4 9/0900	1000	8/1045 9/0959	0300	9/0315	0020
66-114A	Feb. 14 15/1000	0300	15/0011 15/0348	0030	15/0345	0003
67-12B			15/0515 16/0600	0300	16/0416	0003
65-95B	Feb. 10 21/0000	2400	20/2205 21/0112	0030	21/0112	0004
67-16A	Mar. 6 M 8/0000	1200			M 6/2330	0030
67-17B	Mar. 6 9/0200	1200	M 8/2213 M 9/0412	0100	9/0321	0015
67-15A	Feb. 27 20/0000	2400	11/1812 11/2247	0100	11/2232	0010
66-51C	Mar. 8 14/0000	2400	12/0433 12/0629	0100	12/0637	0010
66-112B	Mar. 8 15/0000	1200	14/1919 15/0130	0100	15/0040	0020
66-21A	Mar. 15 18/0800	1200	18/1754 18/2220	0100	18/2125	0020
67-21B	Mar 15 18/1800	1200	19/0331 19/0628	0130	19/0428	0015
67-22B			22/0520 22/0734	0045	22/0701	0015
67-24B			24/0318 24/1220	0200	24/1120	0010
67-25B	Mar. 27 29/0900	1200	30/1900 30/2039	0045	30/2021	0020
65-95A	Mar. 16 A 3/0000	2400	A 2/2220 A 2/1500	1200	A 2/0550	0100
67-24A	Apr. 5 8/2000	2400	6/0555 7/1225	0100	7/1648	0010
67-30B			11/0946 11/1551	0130	11/1522	0015
66-112A	Apr. 9 13/2100	1200	10/1525 12/1749	0600	12/1403	0006
67-23B	Apr. 10 14/1200	1200	14/0547 14/0936	0045	14/0935	0015
67-33B			16/0536 16/1311	0100	16/1114	0005
67-29A			15/2115 17/0915	0400	17/1038	0003
67-32B			19/0555 19/1146	0130	19/1221	0003
67-37B			24/1815 24/2201	0100	24/2120	0005
66-101G	Apr. 30 M 2/1800	1200			M 6/1200	1200
67-23A	May 4 7/1800	0800	M 7/0900 M 7/1316	0100	7/1215	0015
67-28B	May 14 23/1600	2400	21/2353 22/0219	0100	22/0136	0015
67-44B			24/0500 24/1031	0500	24/0904	0010
67-49B			28/0135 28/1544	0300	28/1530	0015
67-38B	May 14 28/0000	4800			29/1200	1200
67-46B			29/1235 29/1722	0100	29/1432	0005