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This acid-free mask contains²..... folios
with the date range¹⁹⁹³.....

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Act* 1983. You have a statutory right to seek
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☒ Not in the open period as defined
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Date mask applied:^{22/5/2012}.....

NAS 1061 (SEPT 1999)

Series no: E1327

Item no: S/4/AIR Part 6

DOCUMENT REMOVAL ADVICE

Series number: E1327 Control symbol: 5/4/AIR PART 6 Barcode: 7061047

Folio/s numbered: last folio [not numbered]

has been removed from this item because they,

- ☐ are exempt from public access under section 33(1)(g) of the Archives Act 1983,
- ☐ are vulnerable to loss,
- ☐ have been referred to another agency for advice,
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Removed by: Joanne Wood

Position/designation: APS 4

Date: 22 May 2012

When completed place this Advice on the file from which the documents have been removed. Place a copy of it with the removed documents.

FROM HQDAR	FILE 5/4/AIR P66(8)	DATE 27 APR 78	REFERENCES
TO HQOC	ATTENTION SOINTEL		
SUBJECT UNUSUAL AERIAL SIGHTINGS			

1. Herewith a sighting report on an unidentified light observed by members of the crew of HMAS ADROIT. The sighting is interesting as it was made by a group of servicemen and probably has more credibility than some civilian / urban reports.

2 Follow-up action will be taken when ADROIT comes alongside for a protracted stay next month.

Enclosed: Two sighting reports

SIGNATURE <i>J.F. Roddy</i>	NAME J.F. RODDY	RANK SENIOR AIR IV	APPOINTMENT	PHONE NO 5238
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7

REPORT OF UNUSUAL AERIAL SIGHTINGS

Part 1 - Report by Observer

1. Name of observer LEUT JOHN DAVID NAPIER Age 26
Address HMAS ADBOIT GPO DARWIN
State NT Postcode
Occupation NAVAL OFFICER
Phone (home) 279624 Business 815018

2. Exact location of observer 12° 03' S 129° 54' E

3. Start of observation: Date 11 APR 78 Time 2137 (LK) am/pm

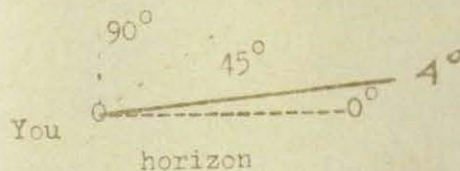
End of observation: Date 11 APR 78 Time 2140 (LK) am/pm

4. Accuracy of date CORRECT times CORRECT

5. Weather conditions at time of observations, referring to cloud,
wind visibility etc. ONE HALF CLOUD NIL WIND
SEA CALM NIL SWELL VISIBILITY 8-10 NM.

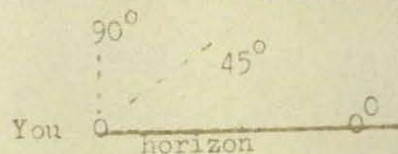
6. In what direction was the sighting first observed? BG 285°

At what angle to the horizon?



7. In what direction was the sighting last observed? BG 285

At what angle to the horizon?

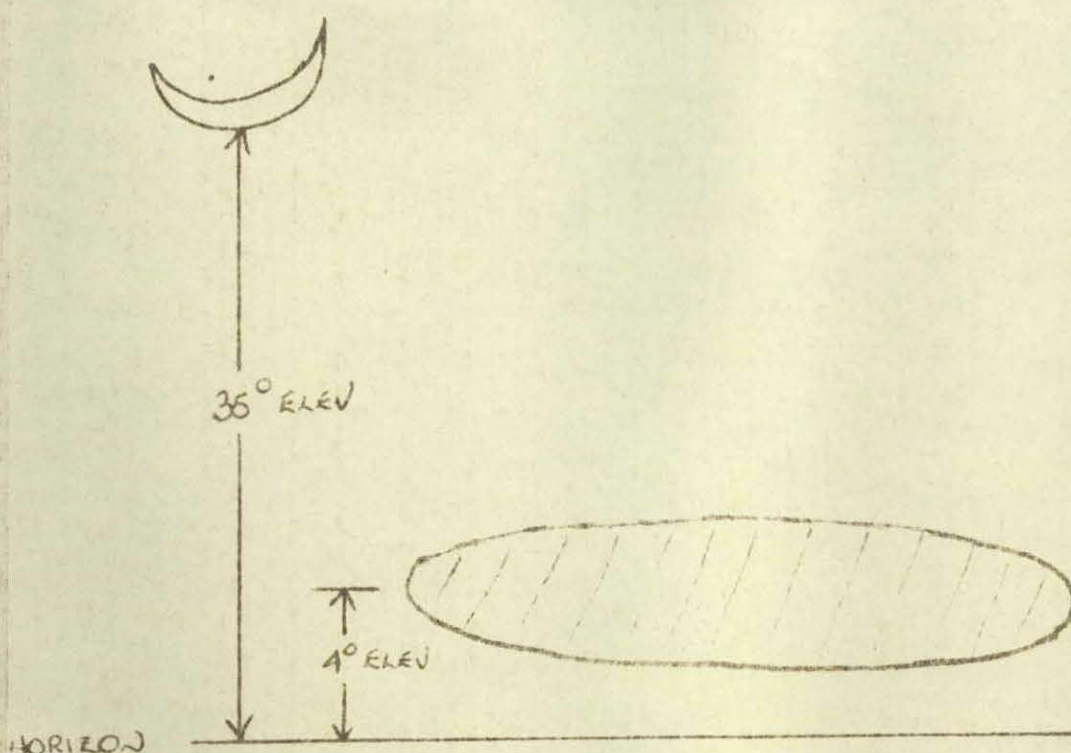


8. Estimate of distance and/or altitude from observer DISTANCE

ESTIMATED 10 NM ALTITUDE 4° ELEVATION TO HORIZON

9. Describe the object(s)/light(s) in your own words, referring to the number, colour, size, shape, brightness (relative to full moon/star), movement, sound, speed, method of propulsion, manner of disappearance and any other unusual features. If possible provide a sketch

Description/sketch of objects



The lights covered the entire object, bathing it in
brilliant red light. No sound was emitted.
Shape as shown!

From observers position - bearing width 4°

10. Have you any photographs of the sighting, or is there any physical evidence of fragments, scorching or ground identifications?

NO

11. How many other witnesses to the sighting? (Please provide names and addresses if possible) 9 ADDITIONAL

WITNESSES - SEE ATTACHED SHEET

12. Any additional comments you wish to make.

In excellent radar conditions, no contact was gained to off-set this sighting. The object appeared to have above the horizon, then descend to the horizon then rise and switch off the lights. The object was next sighted on the horizon with lights only burning at both ends. The object then rose and became completely illuminated before sinking below the horizon. At one stage the lights intensified and appeared to close the ship.

Date 19 APR '18

Signature J. Napier

Part 2 - Unit Report

1. a. Details of military aircraft activity in the area at the time of the sighting.

NONE

Type	Heading	Height	Speed	Departed from	ATD	Des	ATA

Source of information Base Operations DARWIN

- b. Details of civil aircraft activity, including light private aircraft and international flights, in the area at the time of the sighting.

ANSETT

Type	Heading	Height	Speed	Departed from	ATD	Destination	ATA
<u>DC9</u>	<u>±230</u>	<u>19000</u>	<u>400</u>	<u>DARWIN</u>	<u>1024</u>	<u>PT HENDON</u>	<u>-</u>
<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>DARWIN</u>	<u>1224</u>	<u>"</u>	<u>-</u>

Source of information DOT DARWIN

2. Give the bearing, elevation and movement of any planets or major stars that were in that portion of the sky at the time of the sighting all at ±285° FROM OBSERVER

ELNATH ELEV ±12° . BETELGEUSE ±30° ELEV
SIRIUS ±60° ELEV

Source of information Almanac

3. Details of any predicted satellites, rockets, comets or meteorite activity in the area at the time of the sighting

NONE CONSISTENT WITH SIGHTING

Source of information PREDICTION CHARTS

/4. Details

* AK RETURNED TO DARWIN AND TOOK OFF AGAIN AT TIME SHOWN

4. Details of any meteorological, research or radar balloons known to have been in the area at the time of the sighting (refer to point of release, size, colour, ROC, wind profile and whether it was known to have burst)

NONE

Source of information _____

5. Details of any unusual radar traces or images, which may relate to the sightings, as recorded by military or civil networks _____

SEE COMMENTS BY OBSERVER

Source of information _____

6. Provide the following information relating to the weather and atmospheric conditions at the time of the sightings:

Temperature (dry bulb) 28 °C (wet bulb) 24 °C Relative Humidity 79%

Cloud cover 1 OCTA AT 3000 FT type CUMULUS

Temperature inversion of NIL °C at _____ ft measured at _____ hrs

from DARWIN BUREAU OF MET

Wind direction NIL at _____ ft

_____ at _____ ft

_____ at _____ ft

_____ at _____ ft

Pollution level NIL - AT SEA

7. Details of terrain and natural and/or man-made features in the area. (Attach map with significant points marked, if possible) _____

At Sea + 20nm SSW of
Cape FOURCROY (Mitchell Point)

Part 3 - Investigating Officer's Evaluation

1. a. Date of interview See note
b. Place if interview _____
2. Names and addresses of persons interviewed (include phone numbers where applicable).



ROYAL AUSTRALIAN NAVY

TELEPHONE:

IN REPLY QUOTE

SELT. I. G. SCHMIDT
POQMG. I. POTTER R. 93910
POCOX. B. KRISTENSEN R. 66347
LSETC. D. WILLIAMSON R. 109456
LSETP. G. GILLIES R. 106129
ABQMG. G. BROWN R. 117257
ABWTPD. N. PIASER R. 112244
ABQMG. M. TOWNSEND R. 114206
ABWM. M. HOWARD R. 112506

ALL OF HMAS ADROIT

It has not been possible to interview
this crew as ADROIT is on sea duty
with short refuel stops in DAR.
They are scheduled for longer port
time earlier May. Will interview
then

Part 3 - Investigating Officer's Evaluation

1. a. Date of interview See note
b. Place of interview _____
2. Names and addresses of persons interviewed (include phone numbers where applicable).
1. _____ 2. _____

3. _____ 4. _____

3. Narrative evaluation of personalities of witnesses (include any relationship with UFO organizations and their interest in subject matter).
See note
4. Investigating officer's evaluation of possible cause(s).

Cause unknown but lack of radar response points to some form of light aberration.

ADJAR (unit) M. Leary (Name)
24 Apr 78 (Date) San LOR (Rank)

It has not been possible to interview this crew as ADROFF is on sea duty with short refuel stops in DAR. They are scheduled for longer port time early May. Will interview them

Part 3 - Investigating Officer's Evaluation

1. a. Date of interview See note
b. Place of interview "
2. Names and addresses of persons interviewed (include phone numbers where applicable).
1. _____ 2. _____

3. _____ 4. _____

3. Narrative evaluation of personalities of witnesses (include any relationship with UFO organizations and their interest in subject matter).
See note
4. Investigating officer's evaluation of possible cause(s).

Cause unknown but lack of radar response seems to some form of light aberration.

ADJAR (unit) M. L. L. L. L. (Name)
24 APR 78 (Date) SAV LSR (Rank)

It has not been possible to interview this crew as ADJAR is on sea duty with short refuel stops in DAR. They are scheduled for longer port time during May. Will interview them.

RR RAYSNE

DE RAYSND 067 1020221

ZNR UUUUU

R 120220Z APR 78

FM NOCNA

TO RAYWACX/MARINE OPS CANBERRA

INFO RAYSNE/BORDAR

R 112217Z APR 78

FM HMAS ADROIT

TO NOCNA

BT

UNCLAS

SIG RTT

1. WHILE AT ANCHOR IN POSITION 1208 SOUTH 12954 EAST A RED LIGHT WAS OBSERVED AT 112030IK BEARING 280 ESTIMATED RANGE 10NM FOR 30 SECONDS. I CONSIDERED THIS TO POSSIBLY BE AN ICOV AND PROCEEDED TO INTERCEPT. CONTACT WAS NOT GAINED IN 30 MINS AND I COMMENCED A SWEEP TO NORTHEAST AND NORTH
2. AT 112317IK IN POSITION 1205 SOUTH 12954 EAST AN OBJECT BEARING 285 WAS OBSERVED BY SEVERAL PERSONNEL TO RISE AND HOVER AND SINK TO THE HORIZON SEVERAL TIMES BEFORE FINALLY DISAPPEARING BEYOND THE HORIZON. THIS OBJECT APPEARED VERY LARGE AND BATHED WITH BRIGHT RED LIGHTS AND AT ONE STAGE APPEARED TO CLOSE THE SHIP AGAIN THE RANGE COULD BE ESTIMATED AT 10 MILES AND BEARING WIDTH WAS 4 DEGREES. THE LIGHT ALSO APPEARED AT ONE STAGE TO FLICKER ON AND OFF. THIS PHENOMENON LASTED SEVERAL MINUTES.
3. WEATHER CONDITIONS ON BOTH OCCASIONS OF SIGHTINGS WERE GOOD. VISIBILITY 8NM, 1/2 CLOUD WITH NO CLOUD BELOW 15 DEGREES ELEVATION RADAR CONDITION AND PERFORMANCES WERE EXCELLENT WITH LAND ECHOS AT 25 MILES AND TRAWLER SIZE CONTACT 15NM. NO CONTACTS WERE GAINED TO OFFSET THESE SIGHTINGS
4. THERE IS NO POSSIBILITY THAT THE SECOND SIGHTING WAS THE MOON SETTING AND I BELIEVE THEM TO HAVE CAUSED BY A UFO
5. PERSONNEL WHO OBSERVED THE SECOND SIGHTING WERE LEUT JD NAPIER RAN SBLT IC SCHMIDT RAN POOMG I POTTER POCOX B CRISTENSEN LSETC D WILLIAMSON LSETP G GILLIES ABQMG G BROWN ABMTPO N PIASER ABQMG M TOWNSEND ABWM M HOWARD

BT

TELEGRAMS - WEAPONS SALISBURY
TELETYPES - LABSAKE SALISBURY

WEDNESDAY
22ND DECEMBER, 1976

SATELLITE PREDICTION CENTRE
WEAPONS RESEARCH ESTABLISHMENT
BOX 2151, G.P.O., ADELAIDE S.A. 5001

VISIBLE SATELLITE PASSES BULLETIN

FOR FORTNIGHT 26TH DECEMBER 1976 TO 8TH JANUARY 1977

PREDICTIONS ARE PROVIDED FOR THE FOLLOWING HIGHLY LUMINOUS SATELLITES WHOSE PARAMETERS AS LISTED, ARE CORRECT AT PRESENT DATE.
FROM AMONGST THESE, IT IS HOPE TO TABULATE FOR EACH CITY, ON VIEWING SITE, VISIBLE PASSES FOR NOT LESS THAN 6 SATELLITES PER DAY.

- * NOTE No further predictions for PAGEOS 1 will be computed. Since its breakup began in July 1975, its surviving fragments have become optically insignificant.

S A T E L L I T E				CODE	PERIOD MINS	INCLINATION DEGREES	APOGEE KM	PERIGEE KM
NAME	DESIGNATION							
COSMOS 44	1964	53	A	A	99.3	65.1	839.0	617.3
PEGASUS 1	1965	9	A	B	93.7	31.8	494.1	418.4
PEGASUS 2	1965	39	A	C	95.2	31.8	589.7	484.6
* PAGEOS 1	1966	56	A	D	179.6	84.3	5960.9	2376.0
UAS-A2 ROCKET	1968	110	B	E	100.1	35.0	609.5	716.8
COSMOS 269 ROCKET	1969	21	B	F	93.2	74.1	434.3	432.8
PAC - A	1969	68	B	G	91.1	33.0	334.5	320.9
COSMOS 315 ROCKET	1969	107	B	H	93.7	74.0	466.2	448.0
COSMOS 330 ROCKET	1970	24	B	I	94.2	74.1	495.7	464.0
COSMOS 372 ROCKET	1970	86	B	J	100.6	74.1	806.7	772.0
UAS-3 ROCKET	1972	65	B	K	99.5	35.0	778.2	694.6
SKYLAB	1973	27	A	L	92.9	50.0	427.9	408.6

NOTES

1. THESE PREDICTIONS ARE COMPUTED FROM INFORMATION SUPPLIED BY GODDARD SPACE FLIGHT CENTRE OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION U.S.A. (CAUTION. DATA EMPLOYED ARE ONE OR TWO WEEKS OLD BY THE DATE FOR WHICH PREDICTIONS ARE MADE. THEREFORE PREDICTED TIMES OF PASSES ARE UNRELIABLE IF ORBITAL HEIGHTS HAVE BEEN ALTERED BY SATELLITE MANOEUVRES, AS WITH MANNED FLIGHTS.)
2. OF 7514 MAN-MADE OBJECTS CATALOGUED SINCE 1957 THERE WERE STILL 4121 IN SPACE AT 2400Z ON 31ST OCTOBER 1976. THOSE SELECTED ARE LONG-LIVED SATELLITES OF OPTIMUM VISIBLE MAGNITUDE. OTHER BRIGHT OBJECTS SEEN COULD BE SHORT-LIVED SATELLITES OR ROCKET STAGES, EITHER RECENTLY LAUNCHED OR ELSE DECAYING OBJECTS RENDERED INCANDESCENT AS THEY RE-ENTER THE ATMOSPHERE. OTHERS AGAIN COULD BE METEORS.
3. A PASS IS INCLUDED IN THE PREDICTIONS WHEN -
 - (A) THE SATELLITE IS ILLUMINATED BY THE SUN,
 - (B) DURING THE PASS, THE SATELLITE RISES AT LEAST 10 DEGREES ABOVE THE HORIZON, AND
 - (C) THE PASS OCCURS BEFORE CIVIL TWILIGHT FOR MORNING PASSES AND AFTER CIVIL TWILIGHT FOR EVENING PASSES.
4. THE TIMES, ANGULAR POSITIONS AND HEADINGS HAVE BEEN COMPUTED FOR EACH SATELLITE AT ITS MAXIMUM ELEVATION FROM THE VIEWING SITE. THE TIME IS CORRECT TO THE NEAREST INTEGRAL 5 SECONDS. THE AZIMUTH (AZ), OR BEARING FROM TRUE NORTH, ANGULAR ELEVATION (EL) ABOVE THE HORIZON, AND HEADING OR ANGULAR BEARING OF THE SATELLITES MOTION HAVE ALL BEEN COMPUTED FOR THIS SAME INSTANT.
5. A MINUS SIGN AFTER THE TIME INDICATES THAT THE SATELLITE IS NOT ILLUMINATED AT THE STATED TIME OF MAXIMUM ELEVATION BUT IS VISIBLE EARLIER. A PLUS SIGN INDICATES THAT VISIBILITY OCCURS ONLY AFTER THE STATED TIME OF MAXIMUM ELEVATION.

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 9 HRS 30 MINS).

ONLY VISIBLE PASSES ABOVE 10.0 DEG ELEVATION ARE SHOWN.

- , + SIGNIFY NOT VISIBLE AT TIME OF CLOSEST APPROACH, BUT VISIBLE FOR SOME OF PASS BEFORE OR AFTER.

DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
26 DEC 76	C	201500	197	11	109
	O	042810	102	89	0
	E	213420	162	12	68
	K	200645	201	11	112
27 DEC 76	D	042505	136	90	0
	E	224000-	151	32	59
	F	055755	103	41	13
28 DEC 76	D	042200	284	89	0
	E	215845-	152	27	60
	F	051610	106	14	13
	G	054420	35	17	125
29 DEC 76	D	041850	273	88	0
	E	211730	153	22	62
	G	060210-	39	72	123
30 DEC 76	B	060120- 210440-	153 35	30 54	61 122
	O	041540	272	87	359
	E	203610 222240-	155 146	19 77	63 55
	F	052735	100	56	12
31 DEC 76	B	052405 202725	152 35	27 45	62 122
	D	041230	272	86	359
	E	195450 214130-	157 145	16 61	65 56
	F	044550	105	17	13
	G	050130	27	76	123
1 JAN 77	B	044645 195010 212910-	153 35 207	23 37 23	63 123 117
	C	221905-	156	21	65
	D	040915	268	85	0
	E	210015 224615-	148 322	48 32	57 53
	F	053845	282	29	13
	G	051910	209	26	120
2 JAN 77	B	040925 054835 205150	153 330 208	21 55 26	63 58 118
	C	220535-	155	26	63
	D	040805	271	84	0
	E	201900 220505-	150 322	39 42	58 53
	F	045700	114	78	12
	G	040035+	42	80	123
	K	212630	159	12	66
3 JAN 77	B	051115 201435	332 207	65 30	58 118
	C	215205-	154	32	62
	D	040250	270	83	0
	E	193745+ 212355	151 322	32 54	59 54
	F	041515	105	22	13
	G	041600+	210	25	120

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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
3 JAN 77	K	222300-	151	33	58
4 JAN 77	B	043350+ 193715+	320 207	77 35	58 119
	C	195710 213835-	162 152	12 41	70 61
	D	035935	270	81	0
	E	204245	321	70	54
	F	050805-	280	22	13
	K	213325-	153	24	60
5 JAN 77	C	194345 212505-	160 149	14 53	69 60
	D	035615	267	80	0
	E	200135	293	89	54
	I	212435	255	26	164
	K	204345 222935-	155 143	18 81	63 55
6 JAN 77	C	211130-	149	70	59
	D	035300	268	79	0
	E	210620	321	21	53
	I	205740	254	45	167
	K	195400 214005-	158 147	14 55	65 56
7 JAN 77	C	205755	305	89	58
	D	034940	267	78	0
	E	202510	321	27	52
	I	203040	272	85	167
	K	205030 223555-	150 322	39 38	58 53
8 JAN 77	A	205520+ 223735	70 242	35 16	155 157
	C	204420	326	67	58
	D	034620	267	77	0
	E	194405	323	35	53
	I	200345	77	51	168
	J	215530-	106	21	17
	K	200055 214630-	152 324	28 58	60 54
	L	210800-	127	58	36

END OF LOOK ANGLES FOR DARWIN

TELEGRAMS - WEAPONS SALISBURY
TELETYPES - LABSWRE SALISBURY

WEDNESDAY
15TH DECEMBER, 1976

SATELLITE PREDICTION CENTRE
WEAPONS RESEARCH ESTABLISHMENT
BOX 2151, G.P.O., ADELAIDE S.A. 5001

VISIBLE SATELLITE PASSES BULLETIN

FOR WEEK 19TH DECEMBER TO 25TH DECEMBER, 1976

PREDICTIONS ARE PROVIDED FOR THE FOLLOWING HIGHLY LUMINOUS SATELLITES WHOSE PARAMETERS AS LISTED, ARE CORRECT AT PRESENT DATE.
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PAC - A	1969	68 B	G	91.2	33.0	337.6	328.7
COSMOS 315 ROCKET	1969	107 B	H	93.7	74.0	465.7	448.9
COSMOS 330 ROCKET	1970	24 B	I	94.2	74.1	495.9	464.0
COSMOS 372 ROCKET	1970	86 B	J	100.6	74.1	807.2	771.5
DAO-3 ROCKET	1972	65 B	K	99.5	35.0	778.4	694.7
SKYLAB	1973	27 A	L	92.9	50.0	427.6	409.4

NOTES

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2. OF 9514 MAN-MADE OBJECTS CATALOGUED SINCE 1957 THERE WERE STILL 4121 IN SPACE AT 2400Z ON 31ST OCTOBER 1976. THOSE SELECTED ARE LONG-LIVED SATELLITES OF OPTIMUM VISIBLE MAGNITUDE. OTHER BRIGHT OBJECTS SEEN COULD BE SHORT-LIVED SATELLITES OR ROCKET STAGES, EITHER RECENTLY LAUNCHED OR ELSE DECAYING OBJECTS RENDERED INCANDESCENT AS THEY RE-ENTER THE ATMOSPHERE. OTHERS AGAIN COULD BE METEORS.
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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
19 DEC 76	B	043100	205	25	117
	C	044915 200810 214855-	158 35 208	13 30 42	66 123 119
	D	044930	91	81	0
	E	045055+	322	26	53
	F	200645	76	55	167
	G	204335-	330	60	57
	K	043245 203620 222200	154 210 206	18 84 18	62 125 118
	L	055120	312	70	38
20 DEC 76	A	032130+	244	26	157
	B	035350+	206	28	118
	C	043550 195435 213525-	157 33 207	17 39 33	65 123 118
	D	044630	91	82	359
	E	201940	198	10	110
	K	034305 052855 194650 213225	157 148 34 208	14 59 66 25	65 56 126 120
	L	050325	129	47	39
21 DEC 76	C	042225 194100 212155	156 31 206	21 53 27	63 123 117
	D	044330	91	83	359
	E	193820	200	12	112
	F	201820	254	29	167
	G	194500	326	53	56
	K	043930 204250	147 211	40 34	57 122
	L	041530 055210	130 306	22 14	40 37
22 DEC 76	C	040900 054945 210825	154 328 206	27 37 22	62 57 116
	D	044030	89	84	359
	F	193640	68	78	167
	G	200335	324	14	55
	K	034955 053520 195315 213915	151 322 214 203	28 51 49 12	59 54 123 114
	L	050420+	307	28	38
23 DEC 76	C	035535+ 053610 205500	152 325 203	35 27 18	61 57 114
	D	043725	92	86	0
	K	030025+ 044555 204935	152 320 205	21 78 17	61 55 117
24 DEC 76	C	052240 204135	325 201	20 15	57 113
	D	043425	86	87	359
	F	194810	255	22	167
	K	035630+ 054145 195955	147 323 208	70 19 22	55 53 119
25 DEC 76	C	202810	199	13	111
	D	043120	84	88	0
	K	045220+	323	28	53

END OF LOOK ANGLES FOR DARWIN

TELEGRAMS - WEAPONS SALISBURY
TELETYPES - LABSWRE SALISBURY

WEDNESDAY
8TH DECEMBER, 1976

SATELLITE PREDICTION CENTRE
WEAPONS RESEARCH ESTABLISHMENT
BOX 2151, G.P.O., ADELAIDE S.A. 5001

VISIBLE SATELLITE PASSES BULLETIN

FOR WEEK 12TH DECEMBER TO 18TH DECEMBER, 1976

PREDICTIONS ARE PROVIDED FOR THE FOLLOWING HIGHLY LUMINOUS SATELLITES WHOSE PARAMETERS AS LISTED, ARE CORRECT AT PRESENT DATE.
FROM AMONGST THESE, IT IS HOPED TO TABULATE FOR EACH CITY, OR VIEWING SITE, VISIBLE PASSES FOR NOT LESS THAN 6 SATELLITES PER DAY.

S A T E L L I T E				CODE	PERIOD MINS	INCLINATION DEGREES	APOGEE KM	PERIGEE KM
NAME	DESIGNATION							
COSMOS 44	1964	53	A	A	99.3	65.1	839.1	617.3
PEGASUS 1	1965	9	A	B	93.7	31.8	495.2	416.8
PEGASUS 2	1965	39	A	C	95.2	31.8	589.7	464.7
PAGES 1	1966	56	A	D	179.6	84.3	5960.9	2376.0
DAO-A2 ROCKET	1968	110	B	E	100.1	35.0	808.7	717.7
COSMOS 269 ROCKET	1969	21	B	F	93.2	74.1	435.3	432.8
PAC - A	1969	68	B	G	91.2	33.0	339.7	330.9
COSMOS 315 ROCKET	1969	107	B	H	93.7	74.0	465.7	449.0
COSMOS 330 ROCKET	1970	24	B	I	94.2	74.1	495.9	464.3
COSMOS 372 ROCKET	1970	86	B	J	100.6	74.1	807.5	771.7
DAO-3 ROCKET	1972	65	B	K	99.5	35.0	778.5	694.6
SKYLAB	1973	27	A	L	92.9	50.0	427.7	409.8

NOTES

1. THESE PREDICTIONS ARE COMPUTED FROM INFORMATION SUPPLIED BY GODDARD SPACE FLIGHT CENTRE OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION U.S.A. (CAUTION. DATA EMPLOYED ARE ONE OR TWO WEEKS OLD BY THE DATE FOR WHICH PREDICTIONS ARE MADE. THEREFORE PREDICTED TIMES OF PASSES ARE UNRELIABLE IF ORBITAL HEIGHTS HAVE BEEN ALTERED BY SATELLITE MANOEUVRES, AS WITH MANNED FLIGHTS.)
2. OF 9374 MAN-MADE OBJECTS CATALOGUED SINCE 1957 THERE WERE STILL 4075 IN SPACE AT 2400Z ON 31ST AUGUST 1976. THOSE SELECTED ARE LONG-LIVED SATELLITES OF OPTIMUM VISIBLE MAGNITUDE. OTHER BRIGHT OBJECTS SEEN COULD BE SHORT-LIVED SATELLITES OR ROCKET STAGES, EITHER RECENTLY LAUNCHED OR ELSE DECAYING OBJECTS RENDERED INCANDESCENT AS THEY RE-ENTER THE ATMOSPHERE. OTHERS AGAIN COULD BE METEORS.
3. A PASS IS INCLUDED IN THE PREDICTIONS WHEN -
 - (A) THE SATELLITE IS ILLUMINATED BY THE SUN,
 - (B) DURING THE PASS, THE SATELLITE RISES AT LEAST 10 DEGREES ABOVE THE HORIZON, AND
 - (C) THE PASS OCCURS BEFORE CIVIL TWILIGHT FOR MORNING PASSES AND AFTER CIVIL TWILIGHT FOR EVENING PASSES.
4. THE TIMES, ANGULAR POSITIONS AND HEADINGS HAVE BEEN COMPUTED FOR EACH SATELLITE AT ITS MAXIMUM ELEVATION FROM THE VIEWING SITE. THE TIME IS CORRECT TO THE NEAREST INTEGRAL 5 SECONDS. THE AZIMUTH (AZ), OR BEARING FROM TRUE NORTH, ANGULAR ELEVATION (EL) ABOVE THE HORIZON, AND HEADING OR ANGULAR BEARING OF THE SATELLITES MOTION HAVE ALL BEEN COMPUTED FOR THIS SAME INSTANT.
5. A MINUS SIGN AFTER THE TIME INDICATES THAT THE SATELLITE IS NOT ILLUMINATED AT THE STATED TIME OF MAXIMUM ELEVATION BUT IS VISIBLE EARLIER. A PLUS SIGN INDICATES THAT VISIBILITY OCCURS ONLY AFTER THE STATED TIME OF MAXIMUM ELEVATION.

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 9 HRS 30 MINS).

ONLY VISIBLE PASSES ABOVE 10.0 DEG ELEVATION ARE SHOWN.

-,+ SIGNIFY NOT VISIBLE AT TIME OF CLOSEST APPROACH, BUT VISIBLE FOR SOME OF PASS BEFORE OR AFTER.

DATE	CODE	TIME OF CLOSEST APPROACH			AZIMUTH		ELEVATION		SAT. HEADING
12 DEC 76	A	045450			246		56		158
	B	053155			34		17		124
	D	050955			92		74		0
	E	042050	203020	221630-	157	36 209	13 67 26		65 126 120
	H	045950			276		72		13
	J	035805-			95		83		12
13 DEC 76	A	040500			71		56		158
	B	045455			35		14		124
	D	050700			93		75		0
	E	033930	052610	194910 213515	160	148 37 211	11 43 52 32		67 57 126 121
	H	042545			103		43		13
	J	032705-			105		48		12
14 DEC 76	A	031515+	045715		72	243	22 24		158 157
	D	050410			92		76		0
	E	044500	203405	224055	150	211 199	34 39 11		58 122 112
	J	023605-			106		28		12
15 DEC 76	A	040715+			244		59		158
	B	051950			45		81		122
	D	050115			92		77		0
	E	040350	054955	201250 215935	151	325 214 201	27 55 50 13		59 54 123 114
	L	204350			231		60		141
16 DEC 76	A	031720+			68		53		158
	B	044245			37		70		122
	D	045820			92		78		0
	E	032235	050950	193140 211815	153	328 213 203	22 73 63 16		61 54 124 116
	F	203615+			79		38		167
	G	212340-			150		27		60
	K	051530			158		12		66
	L	195555			50		56		142
17 DEC 76	A	040940+			243		25		158
	B	040535+	054455		29	204	59 21		122 116
	D	045525			91		79		0
	E	042740	203655		160	206	86 19		55 117
	F	195445	212920		80	255	13 13		167 167
	K	203000	221520-		38	211	36 39		127 122
	L	055000	204455		132	227	21 13		39 140
18 DEC 76	A	031940+			245		62		158
	B	032830+	050745		32	205	50 23		122 117
	C	202135-			35		22		123
	D	045225			93		80		359
	E	034635+	053225	195535	146	322 208	67 20 23		56 53 119
	F	204745			256		40		167
	G	202545			151		30		60
	K	052225	194030	212550	150	37 213	25 24 57		60 127 124

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 9 HRS 30 MINS).

ONLY VISIBLE PASSES ABOVE 10.0 DEG ELEVATION ARE SHOWN.

-,+ SIGNIFY NOT VISIBLE AT TIME OF CLOSEST APPROACH, BUT VISIBLE FOR SOME OF PASS BEFORE OR AFTER.

DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
18 DEC 76	L	050200 195655	134 229	11 26	40 141

END OF LOOK ANGLES FOR DARWIN

TELEGRAMS - WEAPONS SALISBURY
TELETYPES - LAWSRE SALISBURY

WEDNESDAY
1ST DECEMBER 1976

SATELLITE PREDICTION CENTRE
WEAPONS RESEARCH ESTABLISHMENT
BOX 2151, G.P.O., ADELAIDE S.A. 5001

VISIBLE SATELLITE PASSES BULLETIN

FOR WEEK 5TH DEC. TO 11TH DEC. 1976

PREDICTIONS ARE PROVIDED FOR THE FOLLOWING HIGHLY LUMINOUS SATELLITES WHOSE PARAMETERS AS LISTED, ARE CORRECT AT PRESENT DATE.
FROM AMONGST THESE, IT IS HOPED TO TABULATE FOR EACH CITY, OR VIEWING SITE, VISIBLE PASSES FOR NOT LESS THAN 6 SATELLITES PER DAY.

S A T E L L I T E			CODE	PERIOD	INCLINATION	APOGEE	PERIGEE
NAME	DESIGNATION			MINS	DEGREES	KM	KM
COSMOS 44	1964 53 A	A	A	99.3	65.1	839.3	617.0
PEGASUS 1	1965 9 A	B	B	93.7	31.8	495.1	417.2
PEGASUS 2	1965 39 A	C	C	95.2	31.8	589.6	464.8
PAGEOS 1	1966 56 A	D	D	179.6	84.3	5961.5	2375.3
OAO-A2 ROCKET	1968 110 B	E	E	100.1	35.0	808.6	717.7
COSMOS 269 ROCKET	1969 21 B	F	F	93.2	74.1	435.4	433.4
PAC - A	1969 68 B	G	G	91.3	33.0	341.3	332.9
COSMOS 315 ROCKET	1969 107 B	H	H	93.7	74.0	465.5	449.4
COSMOS 330 ROCKET	1970 24 B	I	I	94.2	74.1	495.9	464.3
COSMOS 372 ROCKET	1970 86 B	J	J	100.6	74.1	807.5	771.7
OAO-3 ROCKET	1972 65 B	K	K	99.5	35.0	778.5	694.6
SKYLAB	1973 27 A	L	L	92.9	50.0	427.7	409.8

NOTES

1. THESE PREDICTIONS ARE COMPUTED FROM INFORMATION SUPPLIED BY GODDARD SPACE FLIGHT CENTRE OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION U.S.A. (CAUTION. DATA EMPLOYED ARE ONE OR TWO WEEKS OLD BY THE DATE FOR WHICH PREDICTIONS ARE MADE. THEREFORE PREDICTED TIMES OF PASSES ARE UNRELIABLE IF ORBITAL HEIGHTS HAVE BEEN ALTERED BY SATELLITE MANOEUVRES, AS WITH MANNED FLIGHTS.)
2. OF 9394 MAN-MADE OBJECTS CATALOGUED SINCE 1957 THERE WERE STILL 4075 IN SPACE AT 2400Z ON 31ST AUGUST 1976. THOSE SELECTED ARE LONG-LIVED SATELLITES OF OPTIMUM VISIBLE MAGNITUDE. OTHER BRIGHT OBJECTS SEEN COULD BE SHORT-LIVED SATELLITES OR ROCKET STAGES, EITHER RECENTLY LAUNCHED OR ELSE DECAYING OBJECTS RENDERED INCANDESCENT AS THEY RE-ENTER THE ATMOSPHERE. OTHERS AGAIN COULD BE METEORS.
3. A PASS IS INCLUDED IN THE PREDICTIONS WHEN -
(A) THE SATELLITE IS ILLUMINATED BY THE SUN,
(B) DURING THE PASS, THE SATELLITE RISES AT LEAST 10 DEGREES ABOVE THE HORIZON, AND
(C) THE PASS OCCURS BEFORE CIVIL TWILIGHT FOR MORNING PASSES AND AFTER CIVIL TWILIGHT FOR EVENING PASSES.
4. THE TIMES, ANGULAR POSITIONS AND HEADINGS HAVE BEEN COMPUTED FOR EACH SATELLITE AT ITS MAXIMUM ELEVATION FROM THE VIEWING SITE. THE TIME IS CORRECT TO THE NEAREST INTEGRAL 5 SECONDS. THE AZIMUTH (AZ), OR BEARING FROM TRUE NORTH, ANGULAR ELEVATION (EL) ABOVE THE HORIZON, AND HEADING OR ANGULAR BEARING OF THE SATELLITES MOTION HAVE ALL BEEN COMPUTED FOR THIS SAME INSTANT.
5. A MINUS SIGN AFTER THE TIME INDICATES THAT THE SATELLITE IS NOT ILLUMINATED AT THE STATED TIME OF MAXIMUM ELEVATION BUT IS VISIBLE EARLIER. A PLUS SIGN INDICATES THAT VISIBILITY OCCURS ONLY AFTER THE STATED TIME OF MAXIMUM ELEVATION.

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 9 HRS 30 MINS).

ONLY VISIBLE PASSES ABOVE 10.0 DEG ELEVATION ARE SHOWN.

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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
5 DEC 76	A	053830	72	25	159
	B	194905	327	50	58
	C	043710	211	73	121
	D	052855	94	66	359
	G	044110+	323	66	56
	H	054755	106	22	13
	J	040955 055215-	107 280	14 36	13 12
K	034205+ 052810	211 200	44 11	123 113	
6 DEC 76	C	041845+	208	52	120
	D	052610	94	67	359
	G	193925	206	11	117
	J	052125	283	63	13
	K	025235+ 043825	214 204	65 15	124 116
7 DEC 76	A	054035	67	62	158
	C	040515+	210	38	119
	D	052320	94	68	0
	J	045030	101	77	13
8 DEC 76	A	045055	72	24	158
	C	035150+	208	29	118
	D	052035	93	69	359
	H	054045	113	77	12
	J	041930	105	44	12
	K	025910+	209	26	121
9 DEC 76	A	054255	245	53	158
	C	033825+	207	22	117
	D	051745	93	70	359
	E	204800-	37	25	127
	H	050640	104	30	13
	J	034830 053045	106 280	26 20	12 12
10 DEC 76	A	045305	71	59	158
	D	051455	92	71	359
	E	054330 200650	153 37	19 20	62 127
	H	043230	105	14	13
	J	031730 045950	107 280	16 33	13 12
11 DEC 76	A	040320 054520	72 243	23 23	158 157
	D	051200	93	72	359
	E	050215 211140-	155 48	16 86	63 125
	H	053330	282	29	13
	J	042900	283	58	13

END OF LOOK ANGLES FOR DARWIN

TELEGRAMS - WEAPONS SALISBURY
TELETYPES - LABSWRE SALISBURY

WEDNESDAY
24TH NOVEMBER, 1976

SATELLITE PREDICTION CENTRE
WEAPONS RESEARCH ESTABLISHMENT
BOX 2151, G.P.O., ADELAIDE S.A. 5001

VISIBLE SATELLITE PASSES BULLETIN

FOR WEEK 28TH NOV. TO 4TH DEC., 1976

PREDICTIONS ARE PROVIDED FOR THE FOLLOWING HIGHLY LUMINOUS SATELLITES WHOSE PARAMETERS AS LISTED, ARE CORRECT AT PRESENT DATE.
FROM AMONGST THESE, IT IS HOPED TO TABULATE FOR EACH CITY, OR VIEWING SITE, VISIBLE PASSES FOR NOT LESS THAN 6 SATELLITES PER DAY.

S A T E L L I T E		CODE	PERIOD MINS	INCLINATION DEGREES	APOGEE KM	PERIGEE KM
NAME	DESIGNATION					
COSMOS 44	1964 53 A	A	99.3	65.1	839.5	616.8
PEGASUS 1	1965 9 A	B	93.7	31.8	495.3	417.5
PEGASUS 2	1965 39 A	C	95.2	31.8	589.7	464.8
PAGEUS 1	1966 56 A	D	179.5	84.3	5963.7	2374.1
DAO-A2 ROCKET	1968 110 B	E	100.1	35.0	809.0	717.4
COSMOS 269 ROCKET	1969 21 B	F	93.2	74.1	435.9	433.6
PAC - A	1969 68 B	G	91.3	33.0	343.5	333.7
COSMOS 315 ROCKET	1969 107 B	H	93.7	74.0	465.5	449.6
COSMOS 330 ROCKET	1970 24 B	I	94.2	74.1	496.0	464.5
COSMOS 372 ROCKET	1970 86 B	J	100.6	74.1	807.5	771.7
DAO-3 ROCKET	1972 65 B	K	99.5	35.0	778.5	694.6
SKYLAB	1973 27 A	L	92.9	50.0	428.0	409.3

NOTES

1. THESE PREDICTIONS ARE COMPUTED FROM INFORMATION SUPPLIED BY GODDARD SPACE FLIGHT CENTRE OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION U.S.A. %CAUTION. DATA EMPLOYED ARE ONE OR TWO WEEKS OLD BY THE DATE FOR WHICH PREDICTIONS ARE MADE. THEREFORE PREDICTED TIMES OF PASSES ARE UNRELIABLE IF ORBITAL HEIGHTS HAVE BEEN ALTERED BY SATELLITE MANOEUVRES, AS WITH MANNED FLIGHTS.)
2. OF 9394 MAN-MADE OBJECTS CATALOGUED SINCE 1957 THERE WERE STILL 4075 IN SPACE AT 2400Z ON 31ST AUGUST 1976. THOSE SELECTED ARE LONG-LIVED SATELLITES OF OPTIMUM VISIBLE MAGNITUDE. OTHER BRIGHT OBJECTS SEEN COULD BE SHORT-LIVED SATELLITES OR ROCKET STAGES, EITHER RECENTLY LAUNCHED OR ELSE DECAYING OBJECTS RENDERED INCANDESCENT AS THEY RE-ENTER THE ATMOSPHERE. OTHERS AGAIN COULD BE METEORS.
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5. A MINUS SIGN AFTER THE TIME INDICATES THAT THE SATELLITE IS NOT ILLUMINATED AT THE STATED TIME OF MAXIMUM ELEVATION BUT IS VISIBLE EARLIER. A PLUS SIGN INDICATES THAT VISIBILITY OCCURS ONLY AFTER THE STATED TIME OF MAXIMUM ELEVATION.

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 9 HRS 30 MINS).

ONLY VISIBLE PASSES ABOVE 10.0 DEG ELEVATION ARE SHOWN.

-, + SIGNIFY NOT VISIBLE AT TIME OF CLOSEST APPROACH, BUT VISIBLE FOR SOME OF PASS BEFORE OR AFTER.

DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
28 NOV 76	A	202405	288	15	21
	D	054715	95	59	359
	E	031550+ 050210	225 205	84 18	125 118
	H	200020	80	56	167
	I	052255	255	29	167
	K	041230	40	14	127
29 NOV 76	A	193420	290	39	22
	D	054435	95	60	359
	E	042055	207	22	119
	H	192615	78	24	167
	I	045605	257	51	167
	J	053320 195815	106 252	23 14	12 167
	K	050810	35	60	126
L	034945+	229	32	141	
30 NOV 76	B	211410-	153	37	61
	C	053930	35	21	123
	D	054150	95	61	359
	E	033940+	209	27	120
	H	202720	255	18	167
	I	042915+	47	37	167
	J	050220 192710	107 255	13 24	13 167
	K	041845	37	39	127
1 DEC 76	A	193625	287	17	21
	B	203720	153	32	61
	C	052600	35	29	123
	D	053905	95	61	359
	E	025830+	210	33	122
	G	193535	36	13	124
	H	195315	255	40	168
	I	040230+	78	47	167
	K	032925+ 051440	39 211	26 52	127 124
2 DEC 76	B	200030 213935-	153 326	28 32	62 57
	C	051230	34	39	123
	D	053620	94	62	359
	E	040400	200	11	113
	G	051740 195555	150 32	31 49	59 123
	I	033545+	80	27	167
	J	054255	102	70	12
	K	042510	214	78	125
3 DEC 76	B	192340+ 210245-	153 327	24 37	62 57
	C	045900	31	55	122
	D	053330	95	63	359
	G	053805 201615	327 212	56 34	57 121
	J	051155	105	41	12
	K	033545+ 052120	38 207	71 23	126 119

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 9 HRS 30 MINS).

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-,+ SIGNIFY NOT VISIBLE AT TIME OF CLOSEST APPROACH, BUT VISIBLE FOR SOME OF PASS BEFORE OR AFTER.

DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
4 DEC 76	B	202555	329	43	57
	C	044535	42	79	122
	D	053045	94	64	359
	G	042210+	148	37	59
	H	194610	253	13	167
	I	041745+	255	21	167
	J	044055	106	24	12
	K	043145	209	31	122

END OF LOOK ANGLES FOR DARWIN

89 9911

Headquarters
RAAF Base
DARWIN NT 5789

5/4/AirPt6(5)

23rd November 1976

Bro. P.L. Brooks A.A.I.M.
Administrative Officer
Catholic Mission
Port Keats
via DARWIN NT 5791

UNUSUAL SIGHTING REPORT

1. Your letter, enclosing the report from Miss Lesley Rourke concerning lights sighted in the Providence Hill area, is acknowledged with thanks.
2. A preliminary investigation of likely sources has been carried out. There were no known civil or military aircraft operations being conducted in that area at the time. Several satellites or portions of spent satellites were in the general area over those times. However, only one or two of these could possibly have been observed as described and then only under conditions of heavy light refraction. This is thought unlikely. Some other possible sources were also examined but without success.
3. Your report together with our findings has now been passed to other agencies. Even though the source of this particular sighting may never be established, reports such as this do add to our knowledge of the area and help eventually to establish patterns of activity. Please be assured that these reports are much appreciated and fully utilised.

S. Harding
(S.L. HARDING)
Squadron Leader
for Officer Commanding

Telegrams:
8PI, R, DARWIN

4
Catholic Mission,
Port Keats,
via Darwin, 5791

18.11.76

The Senior Officer,
Intelligence Section
H.Q. RAAF Base
DARWIN N.T.

Dear Sir,

Please find enclosed a report of sightings by a member of the staff, Miss Lesley Rourke.

I think the report is self-explanatory, however if you would like further details you could speak to either her or myself over the Mission Radio in Geranium St.,

Thanking you.

Yours faithfully,

P. L. Brooks

Bro. P. L. Brooks A.A.I.M.
Administrative Officer

Telegrams:
8PI, GPR, DARWIN.

Catholic Mission,
Port Keats,
via Darwin, 5791.

4A

17/11/76

Lights Seen Over Providence Hill on 13th and 14th November, 1976:

On Saturday night, 13th November, I was camping at Providence Hill, in the vicinity of Pearce Point, with the Cumaiyi family and Kim and Stephen Cartwright - 10 people in all.

At approximately 8.30 - 9.00 p.m. a white light crossed overhead travelling in a southerly direction. It appeared to be too high and too fast to be a plane. It's movement was not that of a satellite either, as it veered around to a south-easterly direction before disappearing.

The following night, about the same time, another light appeared. It was much brighter and appeared to be at a lower altitude. Within the next half hour there were four other white lights, travelling in varying directions and of different degrees of brightness - one so faint it was barely visible.

L Roush

WEDNESDAY
17TH NOVEMBER, 1976

SATELLITE PREDICTION CENTRE
WEAPONS RESEARCH ESTABLISHMENT
BOX 2151, G.P.O., ADELAIDE S.A. 5001

VISIBLE SATELLITE PASSES BULLETIN

FOR WEEK 21ST NOV. TO 27TH NOV., 1976

PREDICTIONS ARE PROVIDED FOR THE FOLLOWING HIGHLY LUMINOUS SATELLITES WHOSE PARAMETERS AS LISTED, ARE CORRECT AT PRESENT DATE.
FROM AMONGST THESE, IT IS HOPED TO TABULATE FOR EACH CITY, OR VIEWING SITE, VISIBLE PASSES FOR NOT LESS THAN 6 SATELLITES PER DAY.

S A T E L L I T E			CODE	PERIOD MINS	INCLINATION DEGREES	APOGEE KM	PERIGEE KM
NAME	DESIGNATION						
COSMOS 44	1964	53 A	A	99.3	65.1	840.2	616.1
PEGASUS 1	1965	9 A	B	93.7	31.8	496.0	417.5
PEGASUS 2	1965	39 A	C	95.2	31.8	590.0	464.6
PAGEOS 1	1966	56 A	D	179.6	84.4	5964.1	2374.0
DAO-A2 ROCKET	1968	110 B	E	100.1	35.0	1223.3	303.0
COSMOS 269 ROCKET	1969	21 B	F	93.3	74.1	436.2	434.1
PAC - A	1969	68 B	G	91.3	33.0	345.8	334.2
COSMOS 315 ROCKET	1969	107 B	H	93.7	74.0	465.9	449.5
COSMOS 330 ROCKET	1970	24 B	I	94.2	74.1	496.0	464.5
COSMOS 372 ROCKET	1970	86 B	J	100.6	74.1	807.6	771.6
DAO-3 ROCKET	1972	65 B	K	99.5	35.0	778.6	694.5
SKYLAB	1973	27 A	L	92.9	50.0	428.1	410.0

NOTES

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PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 9 HRS 30 MINS).

ONLY VISIBLE PASSES ABOVE 10.0 DEG ELEVATION ARE SHOWN.

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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
21 NOV 76	A	210755-	290	83	22
	C	193035- 211115-	152 326	42 25	61 57
	D	192655	272	86	181
	J	204055	257	48	167
22 NOV 76	A	201800	114	41	22
	C	191710+	149	56	60
	D	192415	270	85	182
	E	053515	30	76	125
	J	201000	259	83	168
	K	194740	321	13	51
23 NOV 76	A	192755- 211005	118 288	18 35	22 22
	C	204415	324	15	56
	D	055930- 192130	96 271	53 84	359 181
	E	043425	38	47	126
	J	193905	78	57	167
	L	052240	51	39	142
24 NOV 76	A	202020	293	86	22
	D	055650- 191845+	96 272	54 83	358 182
	E	041335+	38	28	126
	I	053430	79	61	169
	J	205035	253	16	167
	K	054500	39	12	128
	L	043500	53	18	143
25 NOV 76	A	193025- 211215-	114 287	40 15	22 21
	D	055405- 191605+	96 269	55 82	359 181
	E	051815	206	24	122
	I	050740	77	34	167
	J	201930	255	26	167
	L	052400	231	34	141
26 NOV 76	A	202235	290	37	22
	D	055120- 191320+	96 269	56 80	359 182
	E	043715+	210	30	123
	H	210815	255	24	168
	I	044055	79	20	167
	J	194830	257	44	167
	K	055120-	38	33	127
	L	043615+	243	80	142
27 NOV 76	A	193245	217	89	22
	D	054835- 191030+	95 270	57 79	359 182
	E	035625+	210	43	124
	H	203410	256	57	167
	I	041410	80	12	167
	J	191735+	258	77	167
	K	050155	38	22	127

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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
27 NOV 76	L	034835+	54	42	143

END OF LOOK ANGLES FOR DARWIN

WEDNESDAY
10TH NOVEMBER, 1976

SATELLITE PREDICTION CENTRE
WEAPONS RESEARCH ESTABLISHMENT
BOX 2151, G.P.O., ADELAIDE S.A. 5001

VISIBLE SATELLITE PASSES BULLETIN

FOR WEEK 14TH NOVEMBER TO 20TH NOVEMBER, 1976

PREDICTIONS ARE PROVIDED FOR THE FOLLOWING HIGHLY LUMINOUS SATELLITES WHOSE PARAMETERS AS LISTED, ARE CORRECT AT PRESENT DATE.
FROM AMONGST THESE, IT IS HOPED TO TABULATE FOR EACH CITY, OR VIEWING SITE, VISIBLE PASSES FOR NOT LESS THAN 6 SATELLITES PER DAY.

S A T E L L I T E				CODE	PERIOD	INCLINATION	APOGEE	PERIGEE
NAME	DESIGNATION				MINS	DEGREES	KM	KM
COSMOS 44	1964	53	A	A	99.3	65.1	840.5	615.8
PEGASUS 1	1965	9	A	B	93.7	31.8	496.7	417.4
PEGASUS 2	1965	39	A	C	95.2	31.8	590.0	464.7
PEGASUS 1	1966	56	A	D	175.1	81.6	6990.6	938.8
DAU-A2 ROCKET	1968	110	B	E	100.1	35.0	809.1	717.2
COSMOS 269 ROCKET	1969	21	B	F	93.3	74.1	436.2	434.1
PAC - A	1969	68	B	G	91.3	33.0	347.0	335.4
COSMOS 330 ROCKET	1970	24	B	I	94.2	74.1	495.9	464.7
COSMOS 372 ROCKET	1970	86	B	J	100.6	74.1	807.6	771.6
DAU-3 ROCKET	1972	65	B	K	99.5	35.0	778.1	695.0
SKYLAB	1973	27	A	L	92.9	50.0	428.7	409.7

NOTES

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2. OF 9394 MAN-MADE OBJECTS CATALOGUED SINCE 1957 THERE WERE STILL 4075 IN SPACE AT 2400Z ON 31ST AUGUST 1976. THOSE SELECTED ARE LONG-LIVED SATELLITES OF OPTIMUM VISIBLE MAGNITUDE. OTHER BRIGHT OBJECTS SEEN COULD BE SHORT-LIVED SATELLITES OR ROCKET STAGES, EITHER RECENTLY LAUNCHED OR ELSE DECAYING OBJECTS RENDERED INCANDESCENT AS THEY RE-ENTER THE ATMOSPHERE. OTHERS AGAIN COULD BE METEORS.
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PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 9 HRS 30 MINS).

ONLY VISIBLE PASSES ABOVE 10.0 DEG ELEVATION ARE SHOWN.

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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
14 NOV 76	A	215115-	117	21	23
	B	041945 192335 210235-	161 35 206	11 13 74	68 124 121
	D	044445 202400	114 256	26 45	3 179
	E	200250	321	20	53
	G	051805	35	22	125
	K	192135 210720-	156 149	16 71	63 55
	L	191210+ 204850	129 306	28 11	39 37
15 NOV 76	B	052245 202555	149 214	46 85	60 121
	D	054410 192520	122 264	11 71	3 179
	E	192140	322	26	53
	G	053945	222	80	123
	I	194030	281	18	11
	J	220415+	255	31	168
	K	201755 220310-	147 322	48 28	57 53
L	200110	306	22	38	
16 NOV 76	B	044605 194915	150 19	41 82	61 122
	C	205715	160	13	67
	D	054740 212700	102 247	57 21	3 179
	G	042510+	36	27	124
	I	191345+	282	30	13
	J	215315+	257	53	167
	K	192825 211345-	149 322	34 42	58 53
L	191330+	305	48	38	
17 NOV 76	A	210335-	118	20	24
	B	040925+ 054830- 191240+ 205155	151 326 37 204	36 28 71 18	61 57 122 116
	C	202355	158	16	66
	D	044715 202505	111 255	31 39	3 179
	G	044640+	214	60	122
	J	210220+	129	89	167
	K	202420	322	65	54
18 NOV 76	A	215600-	289	79	22
	B	051150 201515	326 204	32 19	57 116
	C	201035	156	19	64
	D	034445 192355	121 262	14 64	4 179
	G	050815	209	17	119
	J	203125	79	52	167
	K	193455	152	85	55
19 NOV 76	A	210605-	115	44	22
	B	043510+ 193830	327 206	37 21	57 117
	C	195710 213800-	155 328	24 48	63 58
	D	054450 212345	100 246	64 18	3 179
	G	035320+	210	46	122
	J	200030 214250	79 253	30 17	167 167
	K	203040	321	23	53
20 NOV 76	A	201605 215815-	117 289	19 34	23 22

SATELLITE LOOK ANGLES FOR DARWIN

7 DAYS STARTING 14 NOV 76

PAGE 2

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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
20 NOV 76	C	194345 212430-	154 326	31 35	62 57
	D	044235 201920	110 254	34 36	3 180
	E	051330	38	22	127
	I	054630	80	15	169
	J	192940 211150	81 254	18 29	168 167
	K	194120	323	35	53

END OF LOOK ANGLES FOR DARWIN

TELEGRAMS - WEAPONS SALISBURY
TELETYPES - LABSWRE SALISBURY

WEDNESDAY
3RD NOVEMBER, 1976

SATELLITE PREDICTION CENTRE
WEAPONS RESEARCH ESTABLISHMENT
BOX 2151, G.P.O., ADELAIDE S.A. 5001

VISIBLE SATELLITE PASSES BULLETIN

FOR WEEK 7TH NOVEMBER TO 13TH NOVEMBER, 1976

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NAME	DESIGNATION		MINS	DEGREES	KM	KM
COSMOS 44	1964 53 A	A	99.3	65.1	841.8	614.6
PEGASUS 1	1965 9 A	B	93.7	31.8	497.0	417.6
PEGASUS 2	1965 39 A	C	95.2	31.8	589.9	464.8
PAGEUS 1	1966 56 A	D	175.1	81.6	6990.6	988.8
DAO-A2 ROCKET	1968 110 B	E	100.1	35.0	808.9	717.5
COSMOS 269 ROCKET	1969 21 B	F	93.3	74.1	436.8	434.2
PAC - A	1969 68 B	G	91.4	33.0	348.3	336.8
COSMOS 330 ROCKET	1970 24 B	I	94.2	74.1	495.6	465.1
COSMOS 372 ROCKET	1970 86 B	J	100.6	74.1	807.4	771.9
DAO-3 ROCKET	1972 65 B	K	99.5	35.0	777.6	695.6
SKYLAB	1973 27 A	L	92.9	50.0	428.8	409.9

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7 NOV 76	C	191255	206	22	117
	D	051250 205500	113 256	25 46	2 179
	E	193255 211920-	156 151	18 77	63 55
	F	051045	69	77	167
	I	200405-	105	22	13
8 NOV 76	D	041725 200130	121 263	12 71	3 179
	E	203810	149	60	56
	F	042950	73	23	167
	G	191500	326	20	55
	I	193715	106	14	13
9 NOV 76	D	190835+ 220925	91 244	80 18	178 178
	E	195700 214255-	148 322	47 30	57 53
	F	052330	256	21	167
	I	204605	280	24	13
10 NOV 76	D	053150 211230	109 252	36 34	2 179
	E	191545 210150-	150 323	38 40	58 53
	F	044230+	257	70	167
	I	201920	282	42	13
	K	205410	157	14	65
	L	204605-	130	26	40
11 NOV 76	D	043500 201600	117 259	19 55	3 179
	E	202040	323	52	54
	F	040130+	78	32	168
	I	195235	291	79	13
	K	200425 215035-	161 148	10 40	68 57
	L	195620	133	13	40
12 NOV 76	B	053315	159	13	67
	D	192010 222310	266 241	83 12	179 178
	E	193930	321	69	54
	I	192545	104	55	13
	K	210105-	150	29	59
	L	204735-	307	53	38
13 NOV 76	B	045640	159	12	67
	D	054325 212315	105 249	47 26	3 179
	E	204410	321	15	53
	F	041410+	254	46	167
	K	201130 215705-	153 321	21 77	61 54
	L	195955	133	63	39

END OF LOOK ANGLES FOR DARWIN

DOCUMENT REMOVAL ADVICE

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