



60

ROYAL AUSTRALIAN AIR FORCE

TELEPHONE: (07) 280 2803
FACSIMILE: (07) 280 2306

Intelligence Section
82 Wing
RAAF Base
AMBERLEY QLD 4306

23 December 1992

IN REPLY QUOTE.....

82WG 5/113/Air Pt 10

For Information:

CO OSS AMB
CO ASS AMB

AIR FORCE POLICY ON UFO REPORTS.

Dear Sir,

In reply to your letter of 6 November 1992 the following are the procedures followed by the RAAF on receipt of an Unusual Aerial Sighting (UAS) report.

The switchboard, who usually receive all incoming calls from the public, will connect the caller with the Orderly Officer. The officer will then fill out a standard questionnaire with details given by the caller. The information requested is:

- Names and details of the caller and any other observers;
- Location of, and weather conditions during, the observation;
- Dates and times of start and end of observation;
- Position and movement of the object;
- Description of the object; and
- Whether any photographs were taken.

These reports are then forwarded to the Base UAS Officer who is normally an intelligence officer. Presently the UAS officer for RAAF Base Amberley is myself. Only reports which suggest a defence or security implication are investigated

further. All reports are filed and copies are sent to Command Headquarters. If the initial report is assessed as being of no threat to defence or security, the caller is referred to a local civilian UFO research organisation. The organisation for Brisbane is your "UFO Research Queensland".

Calls which are assessed as having defence or security implications may be investigated by the local UAS officer who completes a second part to the standard questionnaire. In this, attempts are made to establish whether the sighting was merely routine or unscheduled civil or military air traffic, a rising heavenly body, or caused by an unusual weather conditions. The possibility of correlations between other sightings or unusual radar traces are also investigated. The findings of the investigations and any probable causes are reported to Command HQ and also are usually related back to the original caller.

Of the calls received at RAAF Base Amberley, most are not considered to be a defence or security threat or are easily explained by unusual military air traffic at the time.

I hope your questions have been answered sufficiently. If you have any others I can be contacted by phone and will attempt to answer any queries. As you are associated with UFO Research Queensland, I also hope you won't mind if I contact you in relation to any investigations I may have to conduct in the future.

Yours faithfully,



R.R.S. HARRIS
Flying Officer
Base UAS Officer

Record of Conversation.

FLG OFF Russ Harris / [REDACTED]
6 Dec 92

UFO Research QLD

Rang [REDACTED] to both discuss his letter and get info "UFO Research QLD" methods and practices in UAS investigation. He said reports are placed on record after they have been signed and dated. An interview is conducted with the observer if it is deemed necessary.

Observations of bright, slow moving lights are usually discounted. The type of observation they are interested in are those where an object does impossible manoeuvres. eg: horizontal at speed to vertical to Hover.

They consider the interview important as directions, angles, and distances can be accurately ascertain with their simple instruments under guidance of the observer, observers are often vague and inaccurate when asked to quantify the above but when pointing them out in person can be more accurate.

Interesting, unexplained, or unusual sightings are also published in the association journal, "UFO Encounter" and all reports are listed in a regular listing known as the "Jarrod Listing".

He also said 70-80% of sightings are unidentified.

R Harris.

FLG OFF

Base UAS Officer.

23 Dec 92

threat to defence or security, the caller is referred to a local civilian UFO research organisation. The organisation for Brisbane is your "UFO Research Queensland".

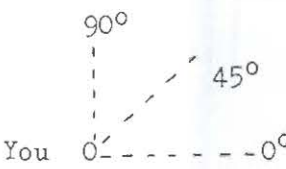
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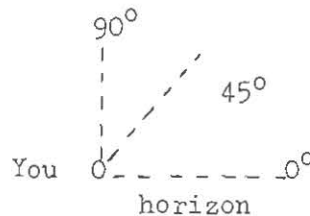
R.R.S. HARRIS
Flying Officer
Base UAS Officer

REPORT OF UNUSUAL AERIAL SIGHTINGSPart 1 - Report by Observer

1. Name of Observer [REDACTED] Age 27
 Address [REDACTED]
[REDACTED] State QLD Postcode 4077
 Occupation Taxi Driver
 Phone (Home) [REDACTED] (Business) _____
2. Exact location of observer Above Address
3. Start of observation: Date 9 Dec 92 Time 1020 am/pm (pm)
 End of observation: Date 9 Dec 92 Time 1045 am/pm (pm)
4. Accuracy of date As for 3 Times _____
5. Weather conditions at time of observation, referring to cloud, wing visibility etc. Good
6. In what direction was the sighting first observed? ~~45°~~ 90°
 At what angle to the horizon? 20-30°
Crossing Above
- 
7. In what direction was the sighting last observed? Going
N - NW

ANNEX A

At what angle to the horizon?



8. Estimate of distance and/or altitude from observer NOT KNOWN

1500 - 2000 FT.

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 Object

2 SMALL OBJECTS MOVING ACROSS SKY.
(Faint)
REDUCED IN COLOUR, NO FLASHING LIGHTS, NO SOUND.

A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Have

66

10. Have you any photographs of the sighting, or is there any physical evidence of fragments, scorching or ground indentations? No

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

WIPF, 

12. Any additional comments you wish to make.

Part 2 - Unit Report

ANNEX A

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

Type	Heading	Height	Speed	Departed From	ATD	Destination	ATA

Source of Information _____

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

Type	Heading	Height	Speed	Departed From	ATD	Destination	ATA

Source of Information _____

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.

Source of Information _____

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

Source of Information _____

A/L 42
ASI 3/A/5
Annex A
31 May 74

/4.

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 _____

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

Source of Information _____

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

Temperature (dry bulb) _____ °C (wet bulb) _____ °C Relative Humidity _____ % Cloud Cover _____ Type _____

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

Wind direction _____ at _____ ft

_____ at _____ ft

_____ at _____ ft

_____ at _____ ft

Pollution level _____

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

Part 3 - Investigating Officer's Evaluation

ANNEX A

1. a. Date of interview _____
 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 UTO organisations and their interest in subject matter).
4. Investigating officer's evaluation of possible cause(s).

_____ (Unit) _____ (Name)
_____ (Date) _____ (Rank)

A/L 42
ASI 3/A/5
Annex A
31 May 74

57
52
59



WITH COMPLIMENTS

OPERATIONS OFFICER

Headquarters
Base Support Wing
RAAF Base
Amberley

26 Nov 92.

1. Seeing as 82WS Intel is the 'authority' on UASs, please provide the answers to the questions raised in the attached letter.
2. Both COOSS & CO AS would appreciate our info. copy as a basis for responding to possible future questions regarding UFOs/UASs over Qld.

J. P. McNamee
(J. P. McNamee)

KE 3297.



FOLIO	
ARD	
DUS	

6th. Nov. 1992. 18/3/AR

The Commanding Officer,
R.A.A.F. Base,
Amberley, Qld., 4306.

~~T/COAS~~
ORSO

17/6

Dear Sir,

Subject: Air Force Policy on UFO Reports.

I and two colleagues are currently working on a book to be entitled "UFO's Over Queensland", in which we deal with the history of such sightings and related claims in this State, as well as the activities of the people who took an interest in the subject.

One of the matters which we wish to clarify for the benefit of our readers, is the position of the Air Force in respect of UFO sightings reports where there appear to be no immediate defence implications. Is there an established policy or procedure? Does it distinguish between civilian and military reports? What is this policy or procedure, if any?

It may be helpful if I define the type of "UFO" of particular interest to us as that which is suggestive of an artifact, a technology and a science not presently comprehended by ours, and which is frequently referred to as "extraterrestrial".

I wish to add also that as I am associated with "UFO Research Queensland" and "The Australian Centre for UFO Studies", I can say on behalf of these and other similar Groups in Australia, that they too are most anxious to have the matter clarified, and would like to find a basis for cooperating with the Air Force in the pursuit of a better understanding of this subject and a more effective accounting to the general public, than has been achieved so far.

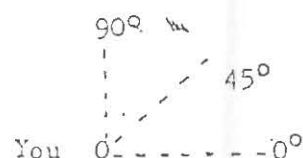
I look forward to your reply, and trust that you will be able to clarify these matters for us.

Yours Faithfully,

*Pls send copy of letter plus
cover note to 82nd INTEL.*

DP

REPORT OF UNUSUAL AERIAL SIGHTINGSPart 1 - Report by Observer

1. Name of Observer [REDACTED] Age
 Address [REDACTED]
 State QLD Postcode
 Occupation
 Phone (Home) [REDACTED] (Business)
2. Exact location of observer 6km Amberley side of
ESK / BRISBANE / IPSWICH intersection.
3. Start of observation: Date Time am/pm
 End of observation: Date Time am/pm
4. Accuracy of date 1 DEC 92 Times
5. Weather conditions at time of observation, referring to cloud,
 wind visibility etc.
6. In what direction was the sighting first observed?
 At what angle to the horizon?
Hovering above tree line.
- 
7. In what direction was the sighting last observed?

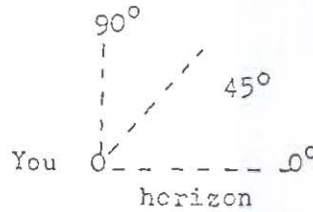
A/L 42
 ASI 3/A/5
 Annex A
 31 May 74

/At what

* This UFO reported
 to CIL JARRAT RAAF ROL

ANNEX A

At what angle to the horizon?



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

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 Object

Large/long bright light
hovering above tree line.
Bigger than helio.

Would suggest that is possible
that this may have been
C130 Hansen
Wolk

A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Have

4

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

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

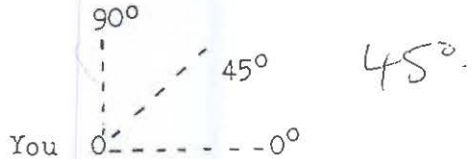
12. Any additional comments you wish to make.

A/L 42
ASI 3/A/5
Annex A
31 May 74

/Part 2

(55)

REPORT OF UNUSUAL AERIAL SIGHTINGSPart 1 - Report by Observer

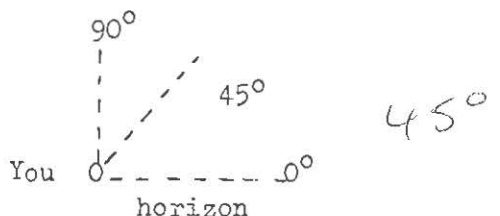
1. Name of Observer [REDACTED] Age 41
 Address [REDACTED]
[REDACTED] State QLD Postcode
 Occupation
 Phone (Home) [REDACTED] (Business)
2. Exact location of observer OUTSIDE HOUSE
3. Start of observation: Date 20 DEC 92 Time 2000 am/pm
 End of observation: Date STILL OBSERVING Time am/pm
4. Accuracy of date Times
5. Weather conditions at time of observation, referring to cloud, wing visibility etc.
NIL CLOUD, GOOD VISIBILITY
6. In what direction was the sighting first observed? P45 NORTH
 At what angle to the horizon?

7. In what direction was the sighting last observed?

A/L 42
 ASI 3/A/5
 Annex A
 31 May 74

/At what

ANNEX A

At what angle to the horizon?



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

VERY HIGH.

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 Object

OBJECT WAS ONE BRIGHT RED LIGHT WHICH
MOVED ACROSS THE SKY THEN DISAPPEARED
THEN REAPPEARED AND MOVED OFF IN A
DIFFERENT DIRECTION. OBJECT LIKE A
RED STAR. NO SOUND. RELATIVELY SLOW
MOVEMENT (IF NOT LIKE A SHOOTING STAR)

A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Have

66

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

NO

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

HUSBAND, WIFE & TWO KIDS SAME ADDRESS

12. Any additional comments you wish to make.

7
A/L 42
ASI 3/A/5
Annex A
31 May 74

/Part 2

REPORT OF UNUSUAL AERIAL SIGHTINGSPart 1 - Report by Observer

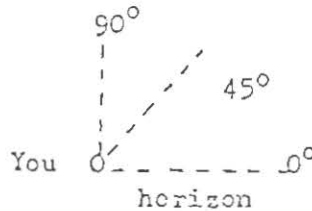
1. Name of Observer [REDACTED] Age 38
 Address [REDACTED]
 State QLD Postcode 4306
 Occupation MANAGER ENGINEERING CO
 Phone (Home) [REDACTED] (Business) [REDACTED]
2. Exact location of observer AT HOME
3. Start of observation: Date 17 NOV 92 Time 0745 am/pm
 End of observation: Date STILL THERE AT TIME OF CALL Time am/pm
4. Accuracy of date Times
5. Weather conditions at time of observation, referring to cloud, wing visibility etc. NO CLOUDS
6. In what direction was the sighting first observed? N/5 WEST
OF OBS POS
 At what angle to the horizon? 45°
- 90°
 45°
 0°
 You
7. In what direction was the sighting last observed? STATIONARY

A/L 42
 ASI 3/A/5
 Annex A
 31 May 74

/At what

ANNEX A

At what angle to the horizon?



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

UNKNOWN DIST HIGH?

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.

STATIONARY: SILVER COLOURED LIGHT
ROUND

Description/Sketch of Object

NB. OBSERVER STATED SIMILAR
OBJECT LAST NIGHT AND
OBSERVED IT TO MOVE EAST TO WEST.

A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Eave

4

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

NO

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

MOTHER IN LAW, BROTHER IN LAW

12. Any additional comments you wish to make.

NO

A/L 42
ASI 3/A/5
Annex A
31 May 74

/Part 2

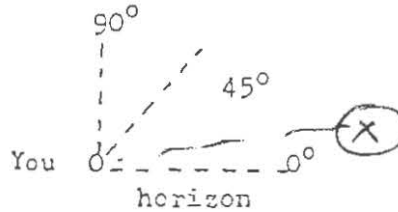
Part 1 - Report by Observer

-

/At what

ANNEX A

At what angle to the horizon?



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

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 Object

Bright lights (at least 6) entered field of vision at angle, then remained stationary at 90° for over a minute, then shot off at an angle.

A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Have

4

10. Have you any photographs of the sighting, or is there any physical evidence of fragments, scorching or ground indentations? No

11. How many other witnesses to the sighting? (Please provide names and addresses if possible) Yes - 3 people

12. Any additional comments you wish to make.

A/L 42
ASI 3/A/5
Annex A
31 May 74

/Part 2



FOLIO	52
FORWARD REF.	57
PREVIOUS F.	

6th. Nov. 1992. 12/3/AIR

The Commanding Officer,
R.A.A.F. Base,
Amberley, Qld., 4306.

Dear Sir,

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I look forward to your reply, and trust that you will be able to clarify these matters for us.

Yours Faithfully,

N of A
This was received fm
FLLOFF Blackmore, BSAMS,
asking advise on how to
reply. I spoke to FLLOFF
Blackmore and forwarded
him a copy of ASI 3/A/5.

RH
 ELLOFF R Harris.
 17 Nov 92

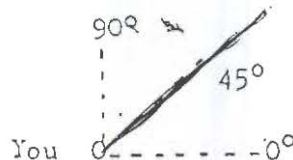
- N of A -
This came back
from BSWAms
directing me to
reply. cf. letter
of reply & record
of telephone conversation
with Dr Gottschall.

23 Dec 92

SI

REPORT OF UNUSUAL AERIAL SIGHTINGSPart 1 - Report by Observer

1. Name of Observer [REDACTED] Age
 Address [REDACTED]
[REDACTED] State Q/L Postcode
 Occupation Farmer
 Phone (Home) [REDACTED] (Business)
2. Exact location of observer Home
3. Start of observation: Date 13/05/92 Time 18:30 ~~pm~~/pm
 End of observation: Date 13/05/92 Time 18:30 ~~pm~~/pm
4. Accuracy of date Times 7 seconds
5. Weather conditions at time of observation, referring to cloud, wind visibility etc. Dusk, very few stars, no cloud.
6. In what direction was the sighting first observed? South
 At what angle to the horizon?



7. In what direction was the sighting last observed? Heading East.

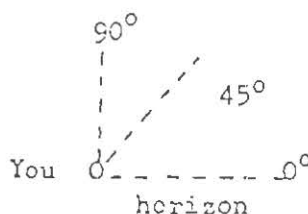
(thinks it was east)

A/L 42
 ASI 3/A/5
 Annex A
 31 May 74

/At what

ANNEX A

At what angle to the horizon?



8. Estimate of distance and/or altitude from observer 2.2 Km.

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 Object

About the size of three balloons. Like a falling star but very large and bright. No sound. It appeared to hit the ground but there was no noise or fire.
[redacted] saw her 'neighbour' on the other side of the hill and she said it appeared to land between the two of them.

A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Eave

4

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

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

12. Any additional comments you wish to make.

13 NOV 92

A/L 42
ASI 3/4/5
Annex A
31 May 74

/Part 2

50

REPORT OF UNUSUAL AERIAL SIGHTINGSPart 1 - Report by Observer

1. Name of Observer [REDACTED] Age
 Address [REDACTED]
[REDACTED] State 8/1d Postcode 4305
 Occupation
 Phone (Home) [REDACTED] (Business)
2. Exact location of observer DRIVING DOWN JACKAWA ST NEAR
IPSWICH HOCKEY GROUNDS
3. Start of observation: Date 6/4/83 Time 18:40 az/pm
 End of observation: Date 6/4/83 Time 18:40 az/pm
4. Accuracy of date ✓ Times 1 2 seconds
5. Weather conditions at time of observation, referring to cloud, wind visibility etc. DUSK, no stars, no cloud
6. In what direction was the sighting first observed? South
 At what angle to the horizon?

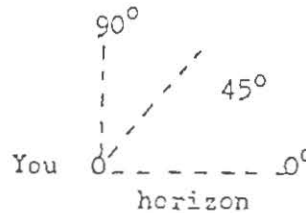


7. In what direction was the sighting last observed? South

A/L 42
 ASI 3/A/5
 Annex A
 31 May 74

/At what

At what angle to the horizon?

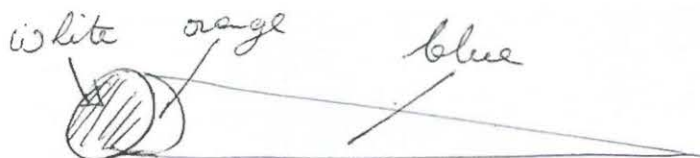


8. Estimate of distance and/or altitude from observer _____

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 Object

White, very bright ball slightly smaller than the full moon.
Orange behind it then a long blue tail.
No noise.



A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Eave

4

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

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

12. Any additional comments you wish to make.

13 Nov 92

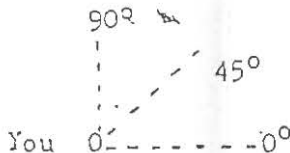
A/L 42
ASI 3/4/5
Annex A
31 May 74

/Part 2

5 NOV 92

49

REPORT OF UNUSUAL AERIAL SIGHTINGSPart 1 - Report by Observer

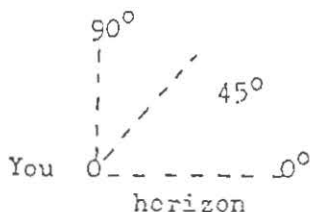
1. Name of Observer [REDACTED] Age
 Address [REDACTED]
 State Postcode
 Occupation Carpenter
 Phone (Home) [REDACTED] after (Business) 075
2. Exact location of observer Pimpama Observatory
3. Start of observation: Date 31 OCT 92 Time 2000 am/pm
 End of observation: Date 31 OCT 92 Time 2005 am/pm
4. Accuracy of date Times
5. Weather conditions at time of observation, referring to cloud, wind visibility etc. Clear night, No Cloud
6. In what direction was the sighting first observed? 35° E of Zenith
 At what angle to the horizon?
- 
7. In what direction was the sighting last observed?

A/L 42
 ASI 3/A/5
 Annex A
 31 May 74

N → S high altitude
 straight line.

/At what

At what angle to the horizon?



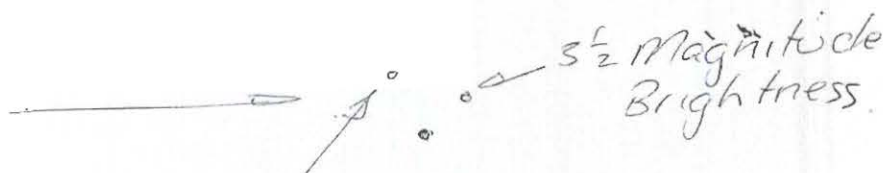
8. Estimate of distance and/or altitude from observer _____

High altitude

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 Object

3 constant glow lights, passing north to south. Arrowhead formation



3 Magnitude
Brighter

slower than a satellite.

5°-10° separation between objects
Steady speed. straight line.

A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Eave

4

10. Have you any photographs of the sighting, or is there any physical evidence of fragments, scorching or ground indentations? NO

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

[REDACTED]

12. Any additional comments you wish to make.

Observer is an amateur astronomer and is a member of the "Southern Astronomical Society". He would like to be advised of any outcome for his own interest.

A/L 42
ASI 3/A/5
Annex A
31 May 74

P. IBBOTSON

00

Ext 3094

3 Nov 92

/Part 2

48

Part 1 - Report by Observer

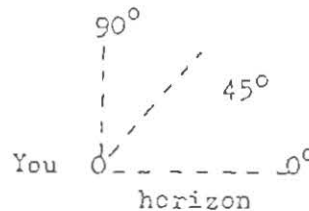
1. Name of Observer _____ Age _____
Address _____
State Qld. Postcode 4585
Occupation _____
Phone (Home) _____ (Business) _____
2. Exact location of observer At Home
3. Start of observation: Date 29 Oct 92 Time 7:14 am/pm
End of observation: Date 29 Oct 92 Time 7:15 am/pm
4. Accuracy of date Accurate Times Accurate
5. Weather conditions at time of observation, referring to cloud, wind, visibility etc. Clear Night
6. In what direction was the sighting first observed? West
At what angle to the horizon?
Low to Horizon
Approx "Couple of
Thousand Feet"
- Diagram:
90°
45°
You 0°-----0°
7. In what direction was the sighting last observed? EAST

A/L 42
ASI 3/A/5
Annex A
31 May 74

/ At what

ANNEX A

At what angle to the horizon?



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

COUPLE OF THOUSAND FEET

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 Object

VERY BRIGHT LIGHT IN THE SKY. PASSED
FROM WEST TO EAST AT A "COUPLE OF THOUSAND
OF FEET" IN 1 MINUTE. LIGHT THEN SHOT
DIRECTLY UP (SKYWARDS)

A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Eave

4

10. Have you any photographs of the sighting, or is there any physical evidence of fragments, scorching or ground indentations? NO

11. How many other witnesses to the sighting? (Please provide names and addresses if possible) NONE

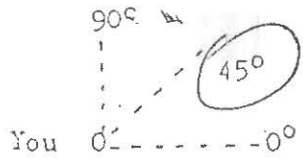
12. Any additional comments you wish to make.

OBSERVER STATED THAT THE LIGHT
WAS ~~SIGHT~~ SILENT & HE BELIEVED
IT WAS NOT AN AIRCRAFT OR
SATELLITE.

A/L 42
ASI 3/A/5
Annex A
31 May 74

/Part 2

REPORT OF UNUSUAL AERIAL SIGHTINGSPart 1 - Report by Observer

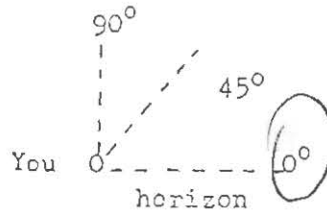
1. Name of Observer [REDACTED] Age 42
 Address [REDACTED]
 [REDACTED] State Rld Postcode 4305
 Occupation BRANCH MANAGER
 Phone (Home) [REDACTED] (Business) [REDACTED]
2. Exact location of observer BRYANT'S Rd, RIPLEY
3. Start of observation: Date 24 OCT 92 Time 5 am/pm
 End of observation: Date 24 OCT 92 Time 5.15 am/pm
4. Accuracy of date _____ Times APPROXIMATELY
5. Weather conditions at time of observation, referring to cloud, wing visibility etc. CLEAR
6. In what direction was the sighting first observed? SOUTH WEST
 At what angle to the horizon? 
7. In what direction was the sighting last observed? ~~SOUTH~~ WEST

A/L 42
 ASI 3/A/5
 Annex A
 31 May 74

/At what

ANNEX A

At what angle to the horizon?



8. Estimate of distance and/or altitude from observer 30 K/m to
100 KLMs.

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. STAR BRIGHT - TAIL AS BRIGHT AS HEAD.
LIKE SHOOTING STAR BUT SMOKE VAPOR TRAIL.

Description/Sketch of Object

~~STAR~~

4"



A/L 42
ASI 3/A/5
Annex A
31 May 74

/10. Have

4

10. Have you any photographs of the sighting, or is there any physical evidence of fragments, scorching or ground indentations? ONLY OBSERVER -

11. How many other witnesses to the sighting? (Please provide names and addresses if possible) SELF. BUT SMOKE
LIKE VAPOR TRAIL WAS OBSERVED.

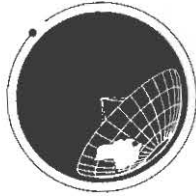
12. Any additional comments you wish to make.

WOWDER WHAT IT WAS.

A/L 42
ASI 3/A/S
Annex A
31 May 74

/Part 2

A U S T R A L I A N S P A C E O F F I C E



With Compliments

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Department of Industry Technology and Commerce

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VISIBLE SATELLITE PREDICTION SERVICE
 DEPARTMENT OF INDUSTRY TECHNOLOGY AND COMMERCE

CANBERRA A.C.T.

VISIBLE SATELLITE PASSES BULLETIN

FOR MONTH OF OCTOBER 1992.

PREDICTIONS ARE PROVIDED FOR THE FOLLOWING HIGHLY LUMINOUS SATELLITES WHOSE PARAMETERS AS LISTED, ARE CORRECT AT PRESENT DATE.

S A T E L L I T E			CODE MAG		PERIOD	INCLINATION	APOGEE	PERIGEE
NAME	DESIGNATION				MINS	DEGREES	KM	KM
COSMOS 44	1964	053 A	A	4	98.7	65.1	797.7	599.6
COSMIC BACKGROUND EXP	1989	89 A	C	3	102.6	99.0	889.5	877.8
COS-B ROCKET	1975	72 B	O	4	120.5	89.2	3090.0	321.8
OAD-A2 ROCKET	1968	110 B	E	4	99.4	35.0	772.9	694.2
COSMOS 185 ROCKET	1967	104 B	F	3	95.6	64.1	646.1	451.9
METEOR 2-9	1982	116 A	G	2	101.8	81.2	887.1	807.3
METEOR 2-10	1983	109 A	H	2	101.1	81.2	880.2	748.1
COSMOS 372 ROCKET	1970	86 B	I	4	100.2	74.1	785.3	754.1
OAD-A3 ROCKET	1972	65 B	J	4	98.6	35.0	727.1	659.9
METEOR 2	1984	72 A	K	2	104.0	82.5	960.9	940.2
ROSAT	1990	49 A	L	4	95.6	53.0	558.7	542.9
COSMOS 1116 ROCKET	1979	67 B	N	4	94.9	81.2	541.1	487.0
COSMOS 1089 ROCKET	1979	26 B	O	4	104.7	83.0	993.4	965.9
EXPLORER 31 FRAGMENT	1965	98 C	P	4	118.9	79.8	2761.6	505.8
METEOR 2-12	1985	13 A	Q	2	104.0	82.5	960.7	936.2
COSMOS 975 ROCKET	1978	4 B	R	4	95.9	81.2	590.3	533.2
COSMOS 1043 ROCKET	1978	094 B	S	4	95.1	81.2	552.4	497.9
HUBBLE SPACE TELESCOPE	1990	37 B	T	4	96.5	28.5	593.7	586.8
COSMOS 1013 ROCKET	1978	056 J	U	4	117.9	74.0	1693.3	1481.7
SEASAT	1978	064 A	V	2	100.2	108.0	769.5	765.2
METEOR 3	1985	100 A	W	2	109.3	82.5	1212.5	1182.9
COSMOS 1174	1980	30 A	Y	4	103.1	66.1	1438.5	373.8
MIR	1986	17 A	BB	4	92.6	51.6	405.4	402.3
METEOR 2-13	1985	119 A	CC	2	104.0	82.5	960.2	937.7
EXPERIMENTAL GEODETIC	1986	61 A	DD	2	115.7	50.0	1496.9	1478.6

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.) ALSO SATELLITES IN LOW ORBIT MAY EXPERIENCE CHANGES IN ATMOSPHERIC DRAG WHICH COULD RESULT IN A SIGNIFICANT VARIATION BETWEEN THE ACTUAL AND PREDICTED PASSES.
2. THE SATELLITES SELECTED ARE LONG-LIVED AND 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.
 - (D) NUMERALS IN BRACKETS AGAINST PREDICTED TIME INDICATE VISIBILITY ON A SCALE OF 0 TO 3. (3) INDICATES THAT THE SATELLITE SHOULD BE EASILY VISIBLE. (0) INDICATES THAT SOME DIFFICULTY MAY BE EXPERIENCED DEPENDING UPON VIEWING CIRCUMSTANCES.
 - (E) A MINUS SIGN AFTER THE TIME INDICATES THAT THE SATELLITE IS NOT ILLUMINATED AT THE STATED TIME OF MAXIMUM ELEVATION BUT IS VISIBLE EARLY AND LATE.

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 10 HRS 0 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
1 OCT 92	C	044235(0) 185735(1)	113 254	15 60	194 346
	D	023925(0) 043850(0)	87 268	24 69	356 356
	J	034230(0)	187	38	98
	K	190715(0) 205150(1)	92 259	26 32	175 175
	N	203005(0)+	258	21	173
	P	034245(0)	87	38	172
	Q	033740(3)	270	77	5
	U	183305(0) 203230(0) 223435(0)	87 255 235	21 69 11	167 166 162
	W	192645(1)	258	30	175
	Y	030810(1)+	296	88	24
	BB	182050(0)	223	39	136
	DD	022650(3)+ 042935(1)	44 208	86 30	137 124
2 OCT 92	C	044000(0) 185500(1)	114 256	14 63	194 346
	D	024620(0) 044550(0)	87 266	30 60	356 356
	J	023925(0)+ 042430(0)	192 177	45 36	103 86
	K	192430(1) 210930(0)	89 256	45 19	175 175
	N	183830(0) 201400(0)	90 258	13 27	174 173
	O	030000(0)+	259	30	176
	P	033015(0)	88	33	172
	Q	020930(0) 035425(1)	104 271	18 45	5 5
	U	050100(0) 200725(1) 220900(0)	122 258 239	15 84 15	17 166 163
	W	190845(1)	260	37	175
	Y	031215(0)+	294	63	23
	DD	013255(2)+ 033455(1)	52 215	56 42	139 130
3 OCT 92	C	043725(0) 185220(1)	114 252	13 67	194 346
	D	025310(0) 045255(0)	87 266	36 53	356 356
	J	032120(0) 050630(0)-	183 165	36 47	93 75
	K	194150(3)	83	78	175
	N	195755(0)	259	34	173
	P	031745(0)	89	28	172
	Q	022630(1) 041105(0)	100 269	31 26	5 5
	U	043530(0) 194220(1) 214335(0)	124 75 241	11 79 20	17 166 164
	V	024805(1)-	119	42	204
	W	045250(1) 185050(1)	101 261	35 46	5 175
	DD	024030(2)+ 044410(0)	222 199	60 22	134 115
4 OCT 92	C	043450(0) 184945(2)	115 255	13 71	194 346
	D	030005(0) 045955(0)	87 265	42 46	356 356
	J	021815(0)+ 040325(0)	188 171	39 39	99 81
	K	195920(2)	261	63	175
	N	194145(0)	262	43	173
	P	030515(0)	90	24	172
	Q	024325(2) 042735(0)	97 265	52 15	5 5
	U	191720(0) 211810(0)	79 244	64 25	166 164
	V	021200(0) 034930(1)	122 292	17 49	205 203
	W	043450(0) 183255(2)	103 262	28 57	5 175

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 1D HRS 0 MINS).

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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
4 OCT 92	DD	014620(3)+ 034910(0)	240 208	88 28	137 123
5 OCT 92	A	045640(0) 191340(0) 205515(0)	127 69 238	14 32 27	28 156 153
	C	043215(0) 184710(2)	115 258	12 76	194 346
	D	030700(0) 050655(0)-	86 264	49 40	356 356
	E	042030(0)	37	17	123
	J	030015(0)+ 044515(0)	178 162	36 59	87 71
	K	183220(0) 201650(1)	93 260	23 37	175 175
	L	042725(0)	57	14	143
	N	192540(0)	264	56	173
	P	025250(0)	92	21	172
	Q	030015(3)-	74	88	5
	U	185220(0) 205250(0)	81 246	51 32	167 165
	V	031315(2) 045120(0)	115 285	62 11	204 203
	W	041650(0) 181500(3)+	104 263	23 70	5 175
	DD	025430(1) 045900(0)	215 190	39 18	129 103
6 OCT 92	A	195610(0)	246	68	155
	C	042940(0) 184430(2)	115 252	11 80	194 346
	D	031350(0)	87	57	356
	E	033015(0)	38	11	125
	J	015705(0)+ 034215(0)	184 166	36 45	94 76
	K	184935(1) 203425(0)	90 257	39 22	175 175
	L	042210(0)	55	21	143
	N	190935(1)	266	73	173
	P	044040(0)	246	13	171
	Q	031700(2)-	274	55	5
	U	182725(0) 202735(0)	83 248	40 40	167 165
	V	023710(0) 041450(1)	121 289	24 32	205 203
	W	035850(0)	105	18	5
	CC	201835(1)- 220315(0)-	102 269	31 28	5 5
	DD	020005(2)+ 040350(0)	220 198	56 21	133 113
7 OCT 92	A	044035(0) 185725(0) 203910(0)	125 69 235	19 45 20	28 156 152
	C	184155(2)	259	85	346
	D	012105(0) 032045(0)	94 86	10 66	356 356
	E	042445(0)	32	39	120
	J	023910(0)+ 042400(1)	172 157	38 79	82 67
	K	190655(2) 205210(0)	88 253	67 12	175 175
	L	041700(0)	55	31	142
	N	185330(1)	69	86	173
	P	042805(0)	246	15	171
	Q	014855(0)- 033340(1)-	102 270	25 32	5 5
	U	045630(0) 200220(0)	114 251	29 50	15 166
	V	033830(3)	280	88	204
	W	034050(0) 193005(0)	107 252	14 12	5 175
	CC	203540(2)-	99	52	5
	DD	010555(3)+ 030855(0)	223 205	82 27	136 121

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 10 HRS 0 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	
8 OCT 92	A	194000(0)	241	49	154	
	C	183915(2)	185	89	346	
	D	012800(0) 032735(1)	93 88	14 75	356 356	
	E	033430(0)	35	27	122	
	J	032100(0)	164	57	72	
	K	192420(3)	262	73	175	
	L	041145(0)	52	48	141	
	N	183725(0)	82	67	173	
	P	041525(0)	247	18	171	
	Q	020550(1)-	100	43	5	
	U	043105(0) 193710(0)	118 253	23 63	16 166	
	V	030220(1) 044010(0)	119 287	35 22	204 203	
	W	032245(0) 191200(0)	108 254	11 16	5 175	
	CC	205240(3)-	101	86	5	
	DD	021410(1)+ 041850(0)	213 188	36 17	128 101	
	9 OCT 92	A	042425(0) 184105(0) 202305(0)	123 66 233	26 64 15	27 155 151
		C	183640(2)	78	86	346
D		013455(0) 033430(1)	92 87	18 84	356 356	
E		042910(1)	32	80	115	
J		021800(0)+ 040240(1)	167 334	44 74	77 64	
K		194150(1)	260	42	175	
L		040635(1)	51	74	140	
N		182120(0)	84	51	173	
P		040245(0)+	249	21	171	
Q		022245(3)-	94	73	5	
U		040540(0) 191205(1) 211350(0)	120 253 237	17 77 13	16 166 163	
V		022620(0) 040345(2)	124 292	14 59	205 203	
W		045545(3) 185355(0)	98 256	77 20	5 175	
CC		210935(2)-	272	57	5	
DD		011940(2)+ 032335(0)	219 196	52 20	132 112	
10 OCT 92		A	192350(0)	239	36	154
		C	183405(2)	71	81	346
	D	014150(0) 034125(1)	91 272	22 87	356 356	
	E	033845(0)	27	59	118	
	J	025945(1)+ 044400(0)	160 326	75 30	68 59	
	K	181435(1)+ 195925(0)	90 258	34 25	175 175	
	L	040125(1)	230	74	139	
	P	035010(0)+	249	24	171	
	Q	023930(2)-	274	68	5	
	U	034010(0) 184700(1) 204820(0)	123 81 240	13 86 17	17 166 164	
	V	032730(2)	116	52	204	
	W	043755(2) 183555(0)	96 257	63 25	5 175	
	CC	194140(0)- 212625(1)-	102 269	26 33	5 5	
	DD	022835(0) 043355(0)	204 177	25 17	120 86	
	11 OCT 92	A	040815(0) 182450(1) 200700(0)	121 68 231	36 88 11	26 155 151

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 10 HRS 0 MINS).

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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
11 OCT 92	C	183125(2) 201200(0)	79 245	77 11	346 346
	D	014840(0) 034815(1)	91 265	27 79	356 356
	E	024830(0)+ 043345(0)	32 196	42 58	119 109
	J	034115(0) 193920(0)-	329 32	50 34	61 121
	K	183155(2) 201705(0)	87 255	58 14	175 175
	L	035615(0)	229	48	138
	N	192500(0)	255	12	173
	P	033730(0)+	251	28	171
	Q	011120(0)-	103	21	5
	R	200730(1)+	256	73	173
	T	034130(0)	28	16	115
	U	182155(1) 202255(0)	78 243	70 22	166 164
	V	025125(0) 042900(1) 182325(0)	121 291 237	21 39 18	205 203 335
	W	042000(2) 181755(1)+	97 259	51 31	5 175
	CC	195845(1)-	100	43	5
	DD	013350(1)+ 033835(0)	211 186	34 17	126 98
	12 OCT 92	A	030900(0) 045050(0) 190740(0)	127 291 237	14 48 26
C		182850(2) 200925(0)	75 245	72 12	346 346
D		015530(0) 035505(1)	90 264	31 71	355 356
E		015810(0)+ 034315(1)	33 205	30 73	121 112
J		023825(1)+ 042230(0) 183640(0) 202045(1)-	332 323 36 26	79 20 20 84	65 57 123 115
K		184920(3)	262	84	175
L		021145(0)+ 035110(0)	56 225	21 33	143 137
N		190850(0)	256	15	173
P		032455(0)+	252	33	172
Q		012820(1)-	100	35	5
R		200615(0)+	264	56	173
T		034835(0)	25	25	113
U		045130(0) 195730(0)	110 246	53 29	15 165
V		035245(3)	120	78	204
W		040200(1)	100	42	5
CC		201550(3)-	94	73	5
DD		003915(1)+ 024320(0) 044855(0)	218 195 167	48 19 19	131 109 72
13 OCT 92	A	035205(0)	116	53	26
	C	182610(1) 200650(0)	79 245	68 12	346 346
	D	020215(0) 040155(0)	90 264	37 63	355 356
	E	025255(1)+ 043830(0)	46 189	86 40	114 101
	J	031950(0)+ 191755(0) 210225(0)-	328 29 196	33 53 51	59 118 107
	K	190650(1)	261	49	175
	L	020630(0)+ 034605(0)	54 223	31 24	142 136
	N	185240(0)	257	18	173
	P	031220(0)+	252	39	172
	R	200505(0)	262	44	173
	T	035540(0)	22	37	110
	U	042620(0) 193215(0)	111 248	41 36	15 165
	V	031635(1) 045420(0)- 184830(0)	120 289 235	30 26 13	204 203 335

PARAMETERS ARE FOR TIMES OF CLOSEST APPROACH IN CIVIL TIME (GMT + 10 HRS 0 MINS).

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DATE	CODE	TIME OF CLOSEST APPROACH	AZIMUTH	ELEVATION	SAT. HEADING
13 OCT 92	W	034405(1)	101	34	5
	CC	184730(0) 203245(2)	106 274	12 68	5 5
	DD	014815(0) 035340(0)	203 175	24 17	119 84
14 OCT 92	A	025255(0) 043430(0) 185130(0)	125 290 236	19 32 20	28 24 152
	C	182335(1) 200415(0)	77 246	64 13	346 346
	D	020905(0) 040845(0)	89 263	43 56	355 356
	E	034800(0)	192	46	104
	J	195925(1)	203	71	111
	K	192420(0)	259	29	175
	L	034105(0)	219	18	134
	N	045425(0)- 183630(0)	99 258	32 23	7 173
	P	025945(0)+	253	45	172
	R	200355(0)	261	34	173
	T	040250(0)	19	53	107
	U	040100(0) 190700(0)	114 250	32 45	15 165
	V	024040(0) 041800(3)	125 289	12 71	205 204
	W	032605(0)	103	28	5
	CC	190445(0) 204935(1)	103 270	21 40	5 5
	DD	005325(1)+ 025820(0) 235850(1)+	210 184 217	32 17 45	125 96 131
15 OCT 92	A	033550(1)	109	78	25
	C	182055(1)+ 200140(0)	79 246	60 14	346 346
	D	021550(0) 041530(0)	89 262	49 50	355 356
	E	025730(0)+ 044320(0)	196 181	55 35	108 91
	J	185635(1) 204115(0)-	30 191	78 42	115 102
	K	043940(0) 194200(0)	105 256	17 17	5 175
	L	033605(0)	217	13	132
	N	043815(0) 182020(0)+	100 259	25 29	7 173
	P	024705(0)+	258	53	172
	R	182620(0) 200245(0)	90 260	12 27	174 173
	T	022745(0)+ 041000(1)	24 16	27 73	113 103
	U	033545(0) 184150(0)	116 252	25 57	16 166
	V	034145(1)	118	43	204
	W	030805(0)	104	22	5
	CC	192155(1) 210620(0)	99 267	36 24	5 5
	DD	020305(0) 040840(0)	193 165	19 19	107 70
16 OCT 92	A	023645(0) 041810(0) 183525(0)	123 289 234	26 22 15	27 24 151
	C	181820(1)+ 195905(0)	77 247	56 15	346 346
	D	022235(0) 042215(0)	89 261	55 45	355 356
	E	020700(0)+ 035250(0)	203 184	69 36	111 95
	H	202750(3)+	82	74	174
	J	193810(0) 212310(0)-	198 182	53 35	108 91
	N	042205(0)	101	20	7
	P	023435(0)+	255	61	172
	Q	005045(0)-	102	29	5
	R	182505(0) 200135(0)	89 259	15 22	174 173

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16 OCT 92	T	023450(0)+ 041710(1)	19 302	40 88	110 99
	U	031020(0) 201835(0)	119 236	19 11	16 163
	V	030545(0) 044315(1) 183745(0)	123 290 239	17 47 22	205 203 335
	W	025005(0) 044035(2)	105 270	18 61	5 4
	BB	194715(0)-	139	20	46
	CC	193855(2) 212305(0)	97 265	60 13	5 5
	DD	010800(0) 031325(0)	201 174	23 17	117 81
17 OCT 92	A	031930(1)-	293	71	25
	C	195630(0)	247	16	346
	D	002845(0) 022920(0) 042855(0)	98 88 260	11 62 40	355 355 355
	E	030215(0) 044815(0)	189 172	39 37	100 82
	H	200430(1)+	85	49	174
	J	183515(1) 202005(0)	202 186	75 37	112 97
	K	183145(2)	264	57	175
	N	040550(0)	103	16	7
	P	022200(1)+	257	71	172
	R	182350(0) 200030(0)	88 257	19 18	174 173
	T	024200(0)+ 042425(1)	16 193	57 80	106 94
	U	024450(0) 044615(1) 195305(0)	122 277 239	14 88 15	17 14 163
	V	040655(2)	114	65	204
	W	023200(0) 042245(3)	107 271	14 75	5 5
	BB	203100(0)-	309	55	41
	CC	195555(3)	281	82	5
	DD	001305(1)+ 021805(0) 042325(0) 231830(1)+	209 183 155 215	30 16 26 42	124 94 60 130
18 OCT 92	C	195350(0)	247	17	346
	D	003535(0) 023605(1) 043530(0)	98 87 259	15 70 35	355 355 355
	E	021145(0)+ 035740(0)	192 177	44 35	103 86
	H	194115(1)+	88	33	174
	I	204550(0)-	110	31	15
	J	191700(0) 210205(0)-	192 176	43 35	103 86
	K	184920(1)	259	33	175
	N	034940(0)	104	12	7
	P	020925(1)+	263	81	172
	R	182240(0)+ 195920(0)	89 256	24 14	174 173
	T	024910(1)+ 043145(1)	9 172	76 78	102 89
	U	021920(0) 042110(1) 192735(0)	124 106 242	10 74 20	18 14 164
	V	033050(0) 190250(0)	120 237	25 15	205 335
	W	021355(0) 040455(3)	109 48	11 90	5 5
	BB	193820(0)-	132	56	43
	CC	182745(0) 201245(1)	105 271	18 48	5 5
	DD	012250(0) 032825(0)	191 163	18 20	105 68
	19 OCT 92	C	195115(0)	247	18
D		004225(0) 024250(1) 044205(0)	97 86 257	18 77 31	355 355 355
E		030705(0)	181	34	90
H		191800(0)+ 205950(0)	90 258	22 27	174 173

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19 OCT 92	I	215050(0)-	281	39	14	
	J	195855(0)	183	34	92	
	K	040435(0) 190655(0)	106 257	15 20	5 175	
	P	015655(1)+	114	89	172	
	R	182125(0)+ 195810(0)	88 255	29 12	174 173	
	T	025625(1)+ 043900(1)	177 165	88 82	98 85	
	U	035600(0) 190215(0)	108 244	58 26	14 164	
	V	043210(3) 182650(1)	293 242	85 37	204 336	
	W	034700(3)	98	75	5	
	Y	212055(0)-	119	21	26	
	BB	184530(0)	138	25	45	
	CC	184455(1) 202935(0)	102 269	30 28	5 5	
	DD	002740(0) 023315(0) 043750(1) 192855(0)-	200 171 147 58	22 17 37 20	115 79 52 142	
		233245(0)+	207	28	123	
	20 OCT 92	C	194840(0)	248	19	346
D		004915(0) 024930(1) 044835(0)-	96 86 256	22 85 27	355 355 355	
E		021635(0)+ 040230(0)	184 168	35 43	94 77	
F		194640(2)	67	76	154	
H		185445(0) 203625(1)	92 260	15 39	174 173	
I		211400(1)-	286	76	14	
J		185550(0) 204055(0)-	188 172	37 38	98 81	
K		042220(0) 192440(0)	101 253	25 11	5 175	
P		014425(1)+	90	79	172	
T		030340(1)+ 044610(1)-	180 327	80 86	93 80	
U		033050(0) 183655(0)	110 247	46 32	15 165	
V		035600(1)	119	36	204	
W		032905(2)	99	61	5	
Y		212455(0)-	118	30	25	
BB		192910(0)	310	41	41	
CC		190200(2) 204615(0)	99 265	50 17	5 5	
DD		013755(0) 034305(0) 203555(2)- 223805(1)+	180 154 49 214	16 27 62 39	91 58 139 129	
21 OCT 92		C	194605(0)	248	20	346
		D	005600(0) 025610(1)	95 263	26 87	355 355
		E	031200(0)	171	38	81
	F	194100(2)	249	80	154	
	H	201300(2)	262	58	174	
	I	203705(0)-	105	57	15	
	J	193750(0) 212245(0)-	177 162	34 60	87 71	
	K	043955(1)	98	43	5	
	N	043700(0)	277	52	7	
	P	013155(1)+	89	71	172	
	T	031055(1)	177	78	89	
	U	030535(0)	112	36	15	
	V	032000(0) 185200(0)	124 240	15 26	205 335	
	W	031110(2)	99	50	5	
	Y	212855(0)-	116	42	25	

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21 OCT 92	BB	183625(1)	137	75	42
	CC	191900(3)	98	84	5
	DD	004235(0) 024810(0) 194205(1) 214340(2)	190 161 54 220	18 21 39 56	103 66 140 133
		234725(0)	198	21	113
22 OCT 92	C	194330(0)	249	22	346
	D	010245(0) 030250(1)	94 264	31 79	355 355
	E	022125(0)+ 040715(0)	176 157	36 67	85 69
	F	193525(1)	241	59	153
	G	211435(2)+	261	65	174
	H	194940(3)	245	87	174
	I	200000(0)- 214145(0)-	110 277	30 21	15 14
	J	183445(0) 201945(0)-	182 167	34 45	93 76
	N	042050(1)	279	70	7
	P	011925(0)+	88	63	172
	T	031810(1)	169	83	84
	U	024015(0) 044045(0)	115 279	28 49	15 14
	V	042110(2)	117	54	204
	W	025315(1) 044305(0)	100 267	41 27	5 4
	Y	213255(0)-	114	58	24
	BB	191950(0)	306	14	39
	CC	193555(2)	272	58	5
	DD	015300(0) 035725(1) 184825(0) 204930(3)	170 146 58 222	18 39 23 81	76 51 141 136
		225225(0)	206	27	122
	23 OCT 92	C	194055(0)	249	23
D		010930(0) 030925(1)	93 263	35 72	355 355
E		013055(0)+ 031645(0)	178 164	35 54	89 72
F		040210(0) 192950(0)	127 239	10 44	30 153
G		210105(3)+	261	74	174
H		192620(2)	88	64	174
I		192255(0) 210500(0)-	113 281	17 40	16 14
J		191640(0) 210130(1)-	173 151	37 81	82 67
K		032930(0) 183155(0)	107 257	12 23	5 175
N		040440(1)	72	87	7
P		010655(0)+	88	56	172
T		032520(1)	335	83	80
U		021455(0) 041545(0)	118 281	22 64	16 14
V		034505(0) 191705(0)	121 238	21 18	205 335
W		023520(1) 042520(1)	101 268	33 34	5 4
Y		213650(1)-	117	81	24
BB		182710(0)	309	31	40
CC		195245(1)	270	34	5
DD		005740(0) 030245(0) 195525(2) 215745(1)	179 153 48 212	16 29 68 36	88 57 138 128
24 OCT 92		C	193815(0)	249	24
	O	011610(0) 031600(0)	93 262	40 65	355 355
	E	022615(0)+ 041145(0)	167 334	45 67	76 63

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24 OCT 92	F	035635(0) 192410(0)	126 240	14 33	29 152
	G	204735(3)+	262	84	174
	H	190300(1) 204515(0)	88 254	42 15	174 173
	I	202810(1)-	286	78	15
	J	195830(0)	164	57	72
	K	034715(0) 184935(0)	103 254	22 13	5 175
	N	034830(0)	93	66	7
	P	005430(0)+	91	51	172
	T	033235(0)	348	65	75
	U	014930(0) 035040(1) 185750(0)	120 280 238	16 81 13	17 14 163
	V	184105(1)	244	44	336
	W	021720(0) 040730(1)	103 269	27 42	5 4
	Y	214050(1)-	293	75	23
	CC	182505(1)+ 200930(0)	100 267	41 20	5 5
	DD	000220(0) 020750(0) 041125(2) 190135(1)	188 160 139 54	17 22 61 43	101 65 46 140
		210315(2) 230710(0)	219 196	52 20	132 111
	25 OCT 92	C	193540(0)	249	26
D		012250(0) 032230(0)	92 260	45 59	355 355
E		032120(1) 192830(0)-	301 35	88 22	66 123
F		035100(0) 191835(0)	125 238	18 25	28 152
G		203405(3)+	81	85	174
H		183945(0) 202145(0)	90 256	29 22	174 173
I		195110(0)	109	56	15
J		185530(0) 204005(1)-	169 329	43 71	77 64
K		040450(1)	100	37	5
N		033215(0)	100	49	7
P		004200(0)+	91	46	172
R		042315(0)	105	12	7
T		033940(0)	340	47	72
U		012400(0) 032535(1) 183220(0)	123 109 241	12 81 18	17 14 164
V		041015(1) 194210(0)	120 235	31 12	204 335
W		015920(0) 034940(2)	104 270	22 51	5 4
Y		195850(0) 214450(0)-	118 293	23 55	26 23
CC		184210(3) 202610(0)	93 264	70 11	5 5
DD		011245(0) 031705(1) 200900(3) 221210(0)	168 144 225 204	18 42 75 25	74 50 135 120
26 OCT 92		C	193305(0)	250	27
	D	012930(0) 032900(0) 233405(0)	91 260 104	51 53 10	355 355 355
	E	023055(1)+ 041605(0) 183810(0) 202310(0)-	162 327 37 30	72 31 15 63	69 59 124 117
	F	034525(0) 191300(0)	123 236	25 20	28 151
	G	202035(3)+	81	75	174
	H	195815(1)	258	31	173
	I	191410(0) 205600(0)	110 279	30 22	15 14
	J	193715(1) 212130(0)-	160 327	76 28	68 58
	K	042220(2)	98	64	5
	N	031605(0)	99	37	7
	P	002935(0)+	92	42	172

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26 OCT 92	R	042205(0)	104	15	7
	S	212610(0)-	273	41	6
	T	034645(0)	337	32	69
	U	030030(0)	107	65	14
	V	033415(0) 190615(1)	124 241	12 30	205 336
	W	014115(0) 033150(2)	106 271	17 63	5 4
	Y	200245(0) 214845(0)-	117 291	32 40	25 22
	CC	185905(3)	275	70	5
	DD	001730(0) 022225(1) 042505(3) 191455(3)	177 151 308 47	16 30 85 74	86 56 43 138
		211720(1) 232210(0)	212 186	34 17	127 98
	27 OCT 92	C	193030(0)	251	29
D		013605(0) 033525(0) 234050(0)	90 258 103	57 48 13	355 355 355
E		032545(0) 193245(0) 211805(0)-	329 31 199	44 46 58	61 119 109
F		033950(0) 190725(0)	120 235	34 15	27 151
G		200710(2) 215020(0)	87 252	66 11	174 173
H		193450(1)	260	46	173
I		183700(0) 201910(0)	114 281	16 41	16 14
J		183420(0) 201845(0)-	163 331	54 47	72 61
K		043945(3)-	270	76	5
N		025950(0)	101	29	7
P		001710(0)+ 021805(0)+	94 242	38 22	172 171
R		042055(0)	103	18	7
S		211325(0)-	274	47	6
T		035350(0)	334	21	66
U		023520(0) 043500(0)	109 275	51 26	15 14
V		043520(1) 183005(3)	116 248	45 80	204 336
W		012315(0) 031400(3)	107 272	13 77	5 5
Y		200645(0) 215245(0)-	115 290	44 29	25 22
CC		191555(1)	270	41	5
DD		012735(0) 033100(2) 202250(1) 222655(0)	158 137 218 195	23 66 48 19	63 46 131 109
28 OCT 92	C	192750(0)	250	30	346
	D	014240(0) 034145(0) 234735(0)	89 257 102	64 42 17	355 355 355
	E	023525(0)+ 042015(0) 184220(0) 202735(1)	331 322 32 203	61 13 33 73	63 56 121 112
	F	033410(0) 190150(0)	119 233	49 11	27 150
	G	195340(2) 213650(0)	86 252	57 13	174 173
	H	191125(2)	263	69	174
	I	194220(1)	289	80	15
	J	191555(1)	332	76	64
	K	031210(0)	104	19	5
	N	024340(0) 041905(0)	100 270	22 13	7 7
	P	000445(0)+ 020525(0)+ 235225(0)+	94 244 97	35 24 32	172 171 172
	R	041945(0)	102	22	7
	S	210040(0)-	275	55	7
	T	040050(0) 193625(0)-	331 24	13 25	64 113
	U	021005(0) 041005(0)	112 277	40 34	15 14
	V	035920(0) 193120(0)	122 238	18 21	205 335

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28 OCT 92	W	010510(0) 025610(3)	109 81	10 88	5 5	
	Y	201040(0) 215640(0)-	115 289	61 21	24 22	
	CC	193240(0)	267	24	5	
	DD	003230(0) 023640(1) 043830(2)- 192835(3)	166 143 307 222	19 45 51 70	72 49 41 135	
		213150(0) 233715(0)	203 175	24 17	118 83	
29 OCT 92	C	192515(0)	251	32	346	
	D	014910(1) 034805(0) 235420(0)	89 255 101	70 38 20	355 355 355	
	E	193710(1) 212250(0)-	65 190	88 41	114 100	
	F	032830(2)	115	72	27	
	G	194010(2) 212315(0)	85 253	50 15	174 173	
	H	184805(3)	87	81	174	
	I	190520(0) 204650(0)	108 275	54 11	15 14	
	J	195715(0)	327	30	59	
	K	032950(1)	100	32	5	
	N	022725(0) 040255(0)	102 270	18 16	7 7	
	P	015245(0)+ 234000(0)+	245 97	27 30	172 172	
	R	041835(0)	101	27	7	
	S	204755(0)-	277	64	7	
	T	194330(0)-	22	37	110	
	U	014450(0) 034510(0)	114 279	31 44	15 14	
	V	185515(2)	243	53	336	
	W	023815(3) 042735(0)	96 263	73 14	5 5	
	Y	201435(1)	120	83	24	
	CC	194925(0)	265	14	5	
	DD	014205(1) 034435(3) 183430(3) 203700(1)	150 309 51 210	32 78 80 32	54 43 137 125	
		224155(0)	184	17	96	
	30 OCT 92	C	192240(0)	252	34	346
		D	015545(1) 035415(0)	86 254	77 34	355 355
		E	184640(0) 203215(0)	26 193	68 47	117 104
F		032245(2)	289	77	26	
G		192645(1) 210940(0)	88 255	44 17	174 173	
H		200710(0)	252	12	173	
I		182820(0)+ 201005(0)	110 278	29 22	15 14	
J		185435(0)	332	50	61	
K		034720(2)	97	55	5	
L		040550(0) 193445(0)-	142 56	15 28	47 142	
N		034645(0)-	271	21	7	
O		235040(0)+	258	25	176	
P		014005(0)+ 232740(0)+	247 99	31 28	172 172	
R		041725(0)	100	33	7	
S		203505(1)-	269	74	7	
T		195035(0)	18	54	107	
U		011930(0) 032010(0)	116 281	24 57	16 14	
V		042425(0) 195625(0)	120 236	26 15	205 335	
W		022020(2) 040950(0)	98 264	60 18	5 5	
Y		183230(0) 201835(1)	120 294	17 73	26 23	

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30 OCT 92	DD	004720(0) 025030(3) 194225(1) 214640(0) 235215(0)	156 138 217 193 165	24 71 44 18 19	61 45 130 107 70
31 OCT 92	C	192000(0)	251	36	346
	D	000100(0) 020210(1) 040025(0)	100 87 252	23 85 30	355 355 355
	E	194140(0) 212740(0)-	198 181	56 36	108 91
	G	191315(1) 205610(0)	87 255	38 20	174 173
	H	194340(0)	254	18	173
	I	193320(0)	281	42	14
	J	193545(0)	324	19	57
	K	040445(3)	261	87	5
	L	040045(0) 192925(0)	140 52	20 42	45 141
	N	033035(0)-	272	26	7
	P	012730(0)+ 231520(0)+	248 100	34 26	172 172
	R	041610(0)	100	41	7
	S	202220(1)-	273	85	7
	T	195745(1)	18	73	103
	U	005405(0) 025510(1)	119 284	18 73	16 14
	V	192025(1)	241	36	336
	W	020225(1) 035205(0)	99 265	49 22	5 5
	Y	183630(0) 202230(0)	118 292	24 53	26 23
	CC	183905(2)	272	50	5
	DD	015615(1) 035800(1) 184805(2) 205135(0) 225700(0)	142 307 223 201 174	49 46 65 23 17	49 40 134 117 81

END OF LOOK ANGLES FOR AMBERLEY