THE BRITISH ASTRONOMICAL ASSOCIATION

LUNAR SECTION CIRCULAR

Director Alan Wells
Assistant Director/Editor John Pedler

Volume 43 No.8 | Data on pages 7-8 are for Sep. 2006 | Lunations 1035/1036 | Aug. 2006

BAA/ALPO TRANSIENT LUNAR PHENOMENA

Tony Cook

Observations for June were received from: Geoff Burt (Society for Popular Astronomy, UK), Clive Brook (Plymouth, UK) and Gerald North (UK). A combination of the Moon's low altitude and vacations seem to be taking their usual toll on observations at this time of the year.

On 2006 June 5th Geoff Burt, a member of the Society for Popular Astronomy (UK), made of sketch of Copernicus at 21:30UT and noted an unusual white spot in the shadow, 2/3 of the way from the central peaks to the north rim. It did not seem to change in appearance during the sketch. An image by Brendan Shaw taken on 2005 Dec 10 at 17:44UT also shows a white spot, but much near the rim - in this instance it is just some highland emerging through the shadow. It is possible that the spot that Geoff Burt draw is similar in origin, but the displacement from the rim is more than in the Shaw image. Could this be due to the difficulty in portraying details inside the crater in a drawing? Whatever the explanation, if you have an image of Copernicus under similar illumination, please let me know as this could prove helpful in verifying the theory.

On 8th June, Clive Brook telephoned me to say that he thought that Aristarchus was shining exceptionally brightly at 20:30-20:45UT. I talked to him on my mobile whilst I dragged my Dobsonian outside to have a quick look. Obviously this is not a good thing to do as my scope had not cooled down, so seeing was very poor, but nevertheless I could confirm that Aristarchus was looking quite bright. However could this be that it was simply the crater emerging from the morning terminator and the slope of one of it's walls was reflecting the sunlight well? In these situations, during a phone call such as this, there is often little time to observe myself as it is important to activate other observers immediately. Therefore I telephoned a limited alert to Brendan Shaw and Gerald North, sent a text message to Italian UAI and GLR groups, and emailed David Darling. Unfortunately it was not possible to alert everybody in the short observing window as Clive phoned me back at 21:01UT and said that the effect had already faded! The Moon was too low for Brendan Shaw, and Gerald North was just able to get it low above the horizon (20:57-21:48 UT, 216mm reflector, x93, seeing V), although of course by this time the effect had gone. Gerald emailed his observation and although noting that Aristarchus was bright, he supports my theory and Clive now considers this a possibility too. In future apart from the usual telephone alert system I plan to utilize an automated robotic observatory at the University of Nottingham to make rapid response observations using a filterwheel /CCD camera system.

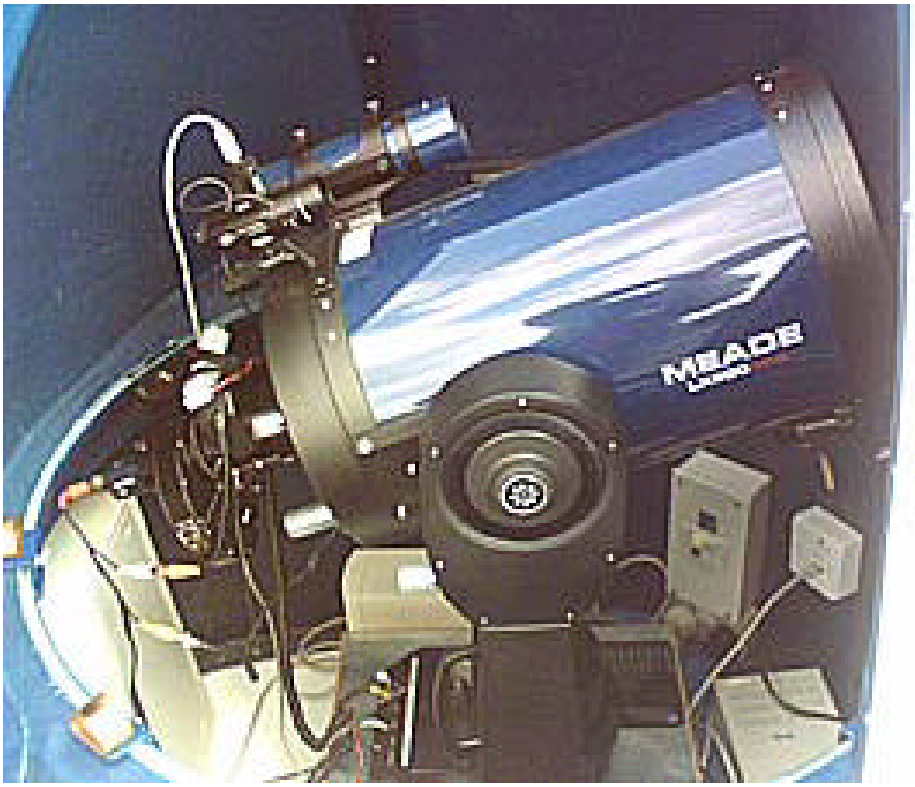

Fig. 1 University of Nottingham, School of Computer Science and IT Robotic Telescope No. 2.

Finally it was nice to meet so many lunar section members at this year's BAA Exhibition meeting in Cambridge in June. Here I met also Peter Grego whom I wish the best of luck in running the BAA Lunar Section topographic section following in the footsteps of Collin Ebdon.

Fig 2. BAA Exhibition Meeting - with Ivor Clarke in the foreground.

The following repeat illumination and libration events for UK observers occur for April.

Event: La Hire (Kein, 1887 Feb 2) can be seen on/from (UT): 2006 Aug 03 (19:50-21:37) - *[Please obtain detailed images/sketches of any bright streaks and see if there are any shadows coming from these?]*

Event: Plato (Bartlett, 1964 Nov 14) can be seen on/from (UT): 2006 Aug 03 (19:49-21:03) - *[Look for a brilliant white peak on the East wall, then see if you can see any colour at it's base or on the south wall]*

Event: SMART-1 impact site (ESA, 2006 Sep 03) can be seen on/from (UT): 2006 Aug 04 (19:49-21:03) - *[Although this is not the actual date/time for the SMART-1 impact, both the illumination and libration are similar to within +/-1 deg, so please just image the SE of the Moon, especially near the terminator - this could prove useful when comparing with the images obtained in September for features in Earthshine]*

Event: Schroter's Valley and Aristarchus (Greenacre and Barr, 1963 Oct 30) can be seen on/from (UT): 2006 Aug 06 (19:58-21:53) - *[Look out for color and determine whether this is spurious e.g. showing on other features]*

Event: Aristarchus-Herodotus (Cowe and Cross, 1964 Sep 20) can be seen on/from (UT): 2006 Aug 08 (00:28-01:22) - *[Any sign of red spots between these two craters?]*

Event: Aristarchus (Alter, 1959 Jan 23) can be seen on/from (UT): 2006 Aug 08 (00:59-01:22) - *[Can you see any variability of blueness inside the crater?]*

Event: Near Ross D (Harris, 1964 Sep 20) can be seen on/from (UT): 2006 Aug 08 (01:08-01:22) - *[Any sign of obscurations/fuziness?]*

Event: Aristarchus (Le Croy, 1976 Feb 15) can be seen on/from (UT): 2006 Aug 08 (20:46-22:41) – *[Any sign of colour – compare crater in blue and red filters?]*

Event: Triesnecker Rille (Markov, 1915 Jul 03) can be seen on/from (UT): 2006 Aug 14 (21:58-22:48) - *[Image/sketch and compare with earlier records at the same illumination]*

Event: Aristarchus (Sekiyuchi, 1970 Jul 26) can be seen on/from (UT): 2006 Aug 17 (03:18-04:58) - *[Monitor brightness of crater and check it's appearance in polarized light]*

Further predictions, including the more numerous illumination only events can be found on the following web site: http://www.lpl.arizona.edu/~rhill/alpo/lunarstuff/ltp.html. For members who do not have access to the internet, please drop me a line and I will post predictions to you. If you would like to join the TLP telephone alert team, please let me know your phone No. and how late you wish to be contacted. If in the unlikely event you see a TLP, please give me a call on my cell phone: +44 (0)798 505 5681 and I will alert other observers. Note when telephoning from outside the UK you must not use the (0). When phoning from within the UK please do not use the +44!

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Sorry... Nothing to fill this space...Ed

Occultation subsection news — Andrew Elliott

With apologies but the top part of the grazing occultation table in last month's LSC became slightly mangled in transit, so I have reprinted the table here:-

```
TRACK   DATE    USNO   SAO/PPM D  MAG %SUN- L  W.U.T. CUSP   T  STAR            MAG1 MAG2
 NO.   (2005)    REF:    REF:          LIT    HH MM.M ANGLE     NAME         (Where double)  12
AUG 17  ZC  773   76998 C  7.0   29- N 23 50.9  7.5 D B                   7.1  8.7  13   SEP  2  ZC
2636  186531    6.8   69+ S 20 47.1  1.2 D C
  14   OCT 10  ZC  539   76140 V  4.3   87- N  6 24.2  4.6 B B 19 q Tau (Taygeta)  4.6 6.1
  15   OCT 10  ZC  552   76199 K  2.9   87- S  7 21.6  7.4 D A 25 eta Tau (Alcyone)3.0 4.6
  16   OCT 10  ZC  545   76172    4.1   87- S  6 38.7  4.9 D A 23 Tau   (Merope)
  17   OCT 12  ZC 1008   78524    5.3   59- N 23 33.0  6.0 D A 49 Aur
  18   OCT 14  ZC 1169   79650    5.3   48- N  5 25.8  4.0 B C 76 c Gem
  19   OCT 30  ZC 3150  164433    6.6   60+ S 19 27.4 11.1 D B 128 B. Cap
  20   NOV  7  ZC  647   76573 Y  5.4   96- S  7 29.1 13.9 D A 59 chi Tau        6.3  6.3
  21   DEC  8  ZC 1208   79864 M  6.4   88- S  8  6.5 12.7 D B 5 B. Cnc         6.5  9.8
  22   DEC 13  ZC 1708  138420 D  6.2   44- S  4 12.1 12.3 D A 9 B. Vir

'D' column after PPM indicates double star code.  'W.U.T.' = Start UT of west end of track

Letter in column after "CUSP ANGLE": -      Column 'T' = Telescope size required: -
'B' = Bright Limb                           'A' = 4"
'D' = Dark Limb                             'B' - 6"
'T' = Near Terminator                       'C' = >6"
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The only graze this month is on August 17, and the track crosses from west to east parallel to, and just north of, the English/Scottish border. Unfortunately it is not very favourable with the moon at low altitude in the north east, (below 10 degrees), and the star being magnitude 7. However the graze takes place against the dark northern limb of the waning 29% sunlit moon.

Predictions for 52°27'41.4"N 1°44'44.0"W (Birmingham) – September 2006

```
Day Time-UT P  Object       O  Max Sp   %  Elg Sn Mn  Mn CA  PA Watts  a   b  Star's apparent
    H  M  S  D Reference    V   Mag    Snlt    Alt Alt Az        Angle  Min/°     RA     Dec

 9/01 13 41/R  PPM 143278   95  6.9 K0  98- 162    39 181 44S 198 220  -.5 1.5   1409.4  12524
 9/02 48 09/R  PPM 143321   95  7.3 M1  97- 161    36 210 27S 181 203  -.1 2.4   1701.3  15325
ABOVE STAR IS A VARIABLE STAR AND OCCULTATION CLOSE TO SMOOTH-MOON TERMINATOR
 9/22 38 14/RK FK5 36       89  4.4 K0  93- 149    30 120 79S 234 255  -.5 1.7  10318.6  75543
10/00 29 25/R  PPM 144270   96  6.9 F0  92- 148    42 150 48S 202 224  -.5 1.9  10659.7  82354
10/01 00 51/R  PPM 144276   85  7.7 A3  92- 148    45 160 90N 244 265 -1.0  .9  10716.0  84126
10/03 32 07/RA PPM 144343   95  7.2 G0  92- 147    43 211 50N 284 305 -1.4-1.2  11116.5  93609
11/00 49 23/RK PPM 117881   76  6.8 K0  85- 134    46 136 72S 229 248  -.7 1.6  20213.2 150607
11/04 04 44/RK PPM 117971   95  7.5 K0  84- 132    51 207 29S 186 205  -.4 3.0  20826.8 155020
11/23 03 49/R  PPM 92061    85  7.3 K0  76- 121    29  94 50N 290 306  -.7 1.2  25513.4 202410
12/00 42 22/R  FK5 1081     78  5.8 F0  76- 121    43 115 75N 266 282  -.9 1.2  25829.0 204152
12/04 08 56/RX PPM 92186    66  7.4 K0  74- 119    59 190 63N 278 293 -1.3 -.4  30438.9 213005
12/20 29 24/R  PPM 92859    66  4.2 B5  67- 110     3  53 67N 278 291   .6 1.3  34643.9 235815
12/20 31 02/R  M 45         89  1.6     67- 110     3  53 26N 319 332   .1  .6  34712.4 240822
ABOVE PREDICTION IS FOR CENTRE OF GALACTIC NEBULAR OBJECT - DURATION ~423.6 MIN
12/20 52 28/RK FK5 139      79  3.0 B5P 67- 110     6  57 49N 296 308   .3 1.2  34753.5 240740
12/21 17 13/RU PPM 92930    75  6.6 F0  67- 109     9  62 50S 216 228   .8 2.1  34921.4 235247
12/21 32 05/RU FK5 142      69  3.8 B8  67- 109    11  64 89S 255 267   .4 1.7  34934.2 240433
ABOVE STAR IS A VARIABLE STAR
12/21 33 30/RK PPM 92936    68  4.8 B8  67- 109    11  64 74N 272 284   .3 1.5  34935.6 240933
ABOVE STAR IS A VARIABLE STAR -- MINIMUM MAGNITUDE =  5.5.
12/21 28 44/RW PPM 92961    85  6.8 B9  67- 109    10  64 23S 189 201  1.4 3.1  35022.5 235216
12/21 56 17/R  PPM 92975    76  6.8 A0  66- 109    14  68 37S 203 215   .9 2.6  35116.9 235901
14/00 25 31/R  PPM 93894    66  7.5 K0  55-  95    29  82 87N 266 272  -.3 1.6  45559.8 271254
14/02 19 28/RA PPM 93952    67  6.8 B9  54-  94    46 105 64S 238 244  -.5 2.1  50019.0 272014
14/04 53 42/R  PPM 94035    68  6.5 A2  53-  93 -7 64 156 89N 265 271 -1.2  .5  50503.3 274225
14/22 51 55/RY PPM 94967    67  5.6 K0  45-  84     9  56 85N 275 276   .4 1.4  55123.4 275818
15/01 27 23/R  PPM 95146    65  8.4 A0  44-  83    31  82 53N 308 308  -.7  .5  55806.5 281736
15/02 38 23/R  PPM 95207    67  7.0 K5  43-  82    41  96 71S 252 252  -.5 1.9  60030.4 280741
15/04 48 25/R  PPM 95332    65  8.4 K2  42-  81 -9 59 130 90N 271 271 -1.1  .7  60441.6 281809
15/23 00 54/R  PPM 96583    75  6.6 A2  34-  72     4  48 56S 243 239  1.1 1.9  64935.1 271105
16/01 40 43/R  PPM 96755    65  8.1 A2  34-  71    24  76 68S 255 251   .1 2.1  65612.9 271432
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16/01 45 02/R  PPM 96757   67  7.0 B9  34-  71    24  76 77S 264 259  -.1 1.8  65621.0 271645
16/04 02 53/RK SAO 78968   77  7.2 K2  32-  69    44 103 48S 236 230  -.6 2.8  70122.8 270858
16/04 20 52/R  PPM 96902   66  8.2 A0  32-  69    47 107 79N 289 284  -.9  .6  70149.3 272221
17/01 49 03/R  PPM 98035   75  8.2 F5  25-  59    16  69 86S 279 269   .1 1.4  75121.5 250544
18/02 07 08/RV FK5 1228    99  4.7 A0  16-  48     9  66 26S 224 210  1.5 5.2  84339.7 212648
18/03 43 46/R  PPM 99030   75  8.5 K0  16-  47    23  84 68N 311 297  -.5  .4  84658.0 213644
18/04 08 19/R  PPM 99039   76  8.1 K0  16-  47    26  88 80N 299 284  -.5  .7  84737.2 213114
19/04 29 51/R  PPM 126616  95  8.4 K0   9-  35    19  87 42N 341 324  -.6 -.9  93641.3 171208
```

N.B. Don’t forget to add 1 hour to the above times during British Summer Time!

Predictions courtesy of the International Occultation Timing Association – European Section – (IOTA/ES) “OCCMOON” program.
A letter in the "D" column indicates a possible double star.
See LSC **35**, 5 (May 1999) for comments on recording observations using the predictions.

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Tabulated data for May 2006

Observer and location	Excellent *days*	Cloudy *days*	Overcast *days*	Hazy *days*	No watch *days*
P.Burt (Chatham)	7 (23%)	8 (26%)	16 (52%)	0 (0%)	-----
A.Bytnar (Mansfield)	2 (6%)	6 (19%)	4 (13%)	0 (0%)	21 (68%)
M.Cook (Cromer)	7½ (24%)	4 (13%)	18½ (60%)	1 (3%)	-----
K.Hall (Warrington)	7 (23%)	11½ (37%)	11½ (37%)	1 (3%)	-----
A.Heath (Nottingham)	7 (23%)	8 (26%)	16 (52%)	0 (0%)	-----
J.Wrigley (Reading)	4½ (15%)	12 (39%)	13 (42%)	1½ (5%)	-----

Tabulated data for June 2006

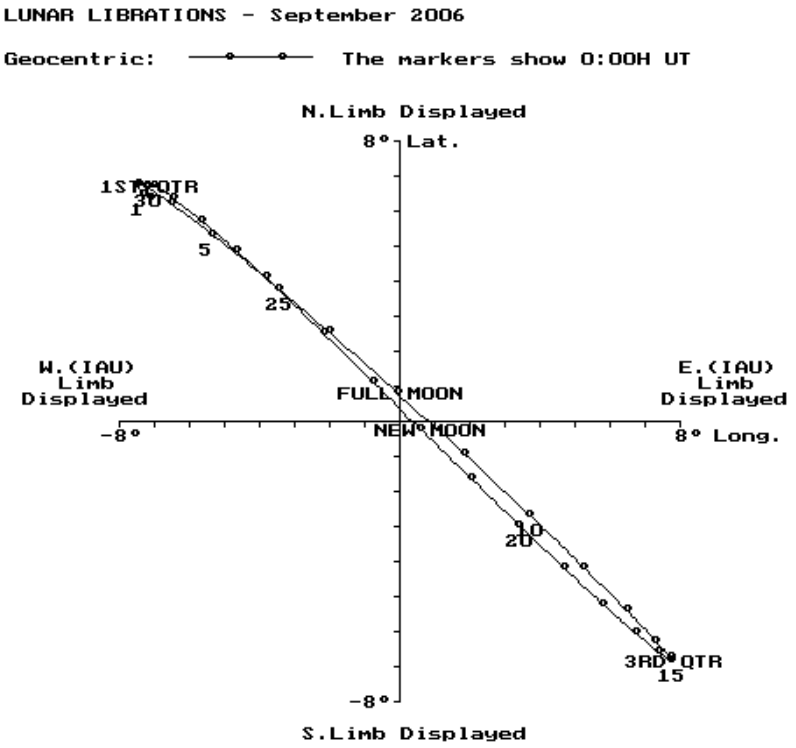
Observer and location	Excellent *days*	Cloudy *days*	Overcast *days*	Hazy *days*	No watch *days*
P.Burt (Chatham)	17 (57%)	5 (17%)	7 (23%)	0 (0%)	2 (7%)
A.Bytnar (Mansfield)	3 (10%)	3 (10%)	7 (23%)	2 (7%)	15 (50%)
M.Cook (Cromer)	6½ (22%)	6½ (22%)	17 (57%)	0 (0%)	-----
K.Hall (Warrington)	8½ (28%)	10½ (35%)	10 (33%)	1 (3%)	-----
A.Heath (Nottingham)	6 (20%)	11 (37%)	13 (43%)	0 (0%)	-----
J.Wrigley (Reading)	4 (13%)	14 (47%)	10 (33%)	2 (7%)	-----

No details

LIBRATION Sept 2006

Date	Libration amountø	PAø	Feature presented
1.0	10.7	47	Bunsen*
2.0	11.0	47	Bunsen*
3.0	10.8	46	Bunsen*
4.0	10.0	46	Bunsen*
5.0	8.6	44	Gerard*
6.0	6.6	42	Galvani*
7.0	4.2	36	Volta*
8.0	1.7	13	Poncelet
9.0	1.7	264	Widmannstatten*
10.0	4.2	243	W. Humboldt*
11.0	6.5	238	Abel*
12.0	8.3	235	Abel*
13.0	9.6	234	Abel*
14.0	10.2	234	Abel*
15.0	10.3	234	Abel*
16.0	9.9	234	Abel*
17.0	9.1	234	Abel*
18.0	7.8	235	Abel*
19.0	6.3	237	Abel*
20.0	4.5	240	Barnard*
21.0	2.6	249	Schorr*
22.0	1.0	295	Liapunov*
23.0	1.9	18	Desargues*
24.0	3.8	34	Xenophanes*
25.0	5.6	39	Galvani*
26.0	7.3	41	Galvani*
27.0	8.7	43	Gerard*
28.0	9.8	45	Gerard*
29.0	10.5	46	Bunsen*
30.0	10.8	47	Bunsen*

Program by Bob Roberts.
Observer at: Lat. 51.0øN, Long. 1.0øW
* indicates that the feature is not illuminated.



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Physical Data for Lunations: 1035/1036 — Computed by Gareth Williams

2006 SEP.	Age d	Phase	Earth's Selenographic Longø	Earth's Selenographic Latø	Sun's Selenographic Colongø	Sun's Selenographic Latø	R.A. h m	Dec. ø	Rises h m	Sets h m	Transit h m	Alt ø
1.0	8.2	0.506	-7.3	6.5	8.0	0.50	16 25	-26.8	15 12	21 38	18 26	9
2.0	9.2	0.609	-7.5	6.8	20.2	0.48	17 23	-28.5	16 17	22 35	19 25	9
3.0	10.2	0.711	-7.3	6.7	32.4	0.45	18 24	-28.5	17 06	23 51	20 25	10
4.0	11.2	0.806	-6.6	6.2	44.6	0.42	19 26	-26.9	17 41	.. ..	21 25	14
5.0	12.2	0.889	-5.4	5.4	56.7	0.39	20 27	-23.4	18 04	01 20	22 23	19
6.0	13.2	0.952	-3.9	4.1	68.9	0.35	21 27	-18.4	18 22	02 55	23 18	25
7.0	14.2	0.990	-2.1	2.6	81.1	0.32	22 23	-12.2	18 36	04 31	.. ..	..
8.0	15.2	0.999	-0.1	0.8	93.3	0.28	23 18	-5.2	18 48	06 05	00 10	32
9.0	16.2	0.977	1.9	-1.0	105.4	0.24	00 12	2.1	19 00	07 37	01 00	40
10.0	17.2	0.927	3.7	-2.7	117.6	0.21	01 05	9.2	19 14	09 10	01 53	47
11.0	18.2	0.852	5.3	-4.2	129.8	0.17	02 00	15.7	19 31	10 42	02 46	54
12.0	19.2	0.760	6.5	-5.4	142.0	0.14	02 56	21.1	19 55	12 14	03 40	59
13.0	20.2	0.658	7.3	-6.3	154.2	0.11	03 54	25.3	20 28	13 39	04 37	63
14.0	21.2	0.551	7.7	-6.7	166.4	0.08	04 53	27.8	21 15	14 52	05 35	66
15.0	22.2	0.446	7.7	-6.8	178.6	0.05	05 53	28.7	22 16	15 48	06 32	66
16.0	23.2	0.345	7.4	-6.6	190.8	0.03	06 51	28.0	23 28	16 27	07 27	65
17.0	24.2	0.254	6.7	-6.0	203.0	0.00	07 46	26.0	00 44	16 53	08 19	62
18.0	25.2	0.173	5.8	-5.2	215.2	-0.02	08 38	22.7	00 44	17 11	09 07	59
19.0	26.2	0.107	4.7	-4.1	227.4	-0.04	09 26	18.5	02 00	17 25	09 52	54
20.0	27.2	0.055	3.4	-2.9	239.6	-0.06	10 11	13.6	03 14	17 36	10 33	49
21.0	28.2	0.020	2.0	-1.6	251.9	-0.09	10 55	8.3	04 26	17 45	11 13	43
22.0	29.2	0.002	0.6	-0.2	264.1	-0.11	11 37	2.7	05 36	17 53	11 52	37
23.0	0.5	0.002	-0.8	1.2	276.3	-0.13	12 18	-3.0	06 46	18 02	12 31	32
24.0	1.5	0.021	-2.2	2.6	288.5	-0.15	13 00	-8.6	07 57	18 12	13 10	26
25.0	2.5	0.056	-3.5	3.8	300.8	-0.17	13 44	-13.9	09 10	18 24	13 52	21
26.0	3.5	0.109	-4.7	4.9	313.0	-0.19	14 29	-18.7	10 26	18 40	14 37	16
27.0	4.5	0.177	-5.7	5.8	325.2	-0.21	15 18	-22.9	11 43	19 02	15 26	12
28.0	5.5	0.258	-6.5	6.4	337.4	-0.23	16 11	-26.1	12 59	19 35	16 18	10
29.0	6.5	0.351	-7.0	6.8	349.6	-0.26	17 06	-28.1	14 06	20 23	17 14	9
30.0	7.5	0.452	-7.3	6.8	1.8	-0.28	18 05	-28.7	15 00	21 29	18 12	9
OCT												
1.0	8.5	0.559	-7.1	6.4	14.0	-0.31	19 05	-27.6	15 39	22 51	19 10	12
2.0	9.5	0.666	-6.6	5.7	26.2	-0.34	20 04	-24.9	16 06	.. ..	20 07	16
3.0	10.5	0.769	-5.7	4.7	38.4	-0.37	21 03	-20.6	16 25	00 21	21 02	22
4.0	11.5	0.860	-4.4	3.3	50.6	-0.40	21 59	-15.0	16 40	01 54	21 54	28
5.0	12.5	0.932	-2.8	1.6	62.7	-0.44	22 53	-8.5	16 53	03 27	22 46	36
6.0	13.5	0.980	-0.9	-0.2	74.9	-0.47	23 47	-1.3	17 05	04 59	23 37	43
7.0	14.5	1.000	1.0	-1.9	87.0	-0.51	00 41	6.0	17 18	06 32	.. ..	..
8.0	15.5	0.988	3.0	-3.6	99.2	-0.54	01 35	12.9	17 34	08 07	00 29	50
9.0	16.5	0.948	4.7	-4.9	111.3	-0.58	02 32	19.0	17 55	09 42	01 25	57
10.0	17.5	0.883	6.2	-6.0	123.5	-0.61	03 31	23.8	18 24	11 14	02 23	62
11.0	18.5	0.801	7.2	-6.6	135.7	-0.64	04 32	27.1	19 07	12 36	03 22	65
12.0	19.5	0.706	7.8	-6.8	147.8	-0.67	05 34	28.6	20 04	13 40	04 22	66

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Contributions related to a specific sub-section should be sent to the appropriate co-ordinator, but send any material of a more general nature to the Editor at:

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Items for the September 2006 circular should reach the Editor by the 10th August 2006