

THE BRITISH ASTRONOMICAL ASSOCIATION



LUNAR SECTION CIRCULAR

Director Alan Wells
Assistant Director/Editor John Pedler

Volume 43 No.7

Data on pages 7-8 are for Aug. 2006

Lunations 1034/1035

July. 2006

TOPOGRAPHICAL SUB-SECTION

COLIN EBDON

My entry in this month's circular starts with a personal announcement as I must advise members that, after careful consideration, I have decided to relinquish the post of Topographical coordinator for the Lunar Section. Life moves on and, after some nine years in the job, I now find that other areas of my life need to take priority. This does not in any way mean that I intend to give up lunar observing; I will still be found at the eyepiece whenever time and conditions permit and will continue to share my observations with the membership from time to time through the *Circular*.

I have enjoyed my period in the job immensely and it has been both a privilege and a joy to correspond with, and share in the observations of, other members who enjoy looking at the Moon as much as I do. I have also learned a great deal during the past years and am grateful to all those more knowledgeable and experienced than myself who have freely given of their advice and expertise and provided the helpful archive and background material on topographical issues which has kept me afloat. My thanks to all of you.

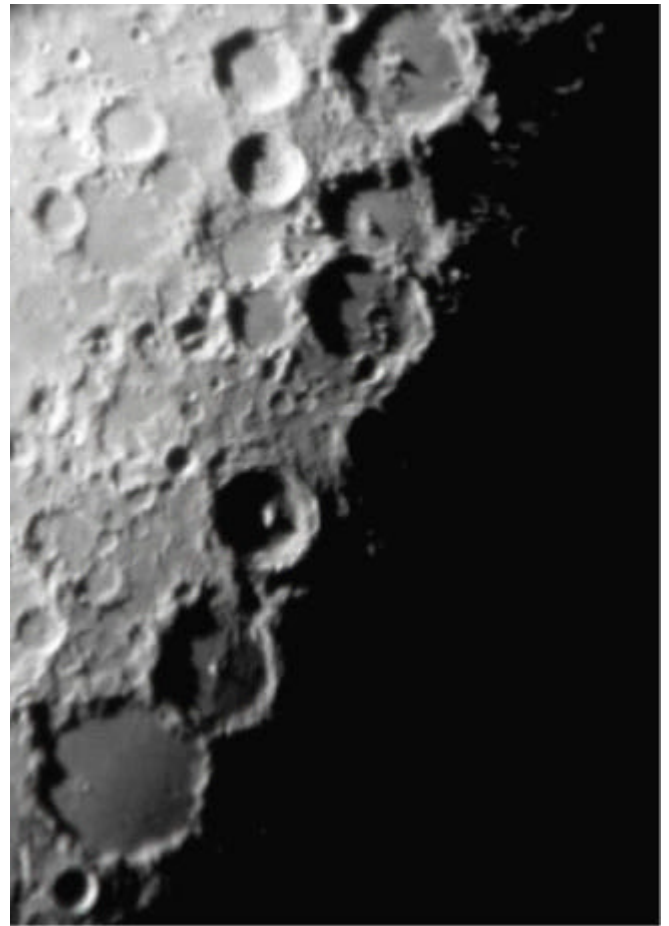
The task now remains during the summer months of finding a suitable successor. Sadly, many of our most experienced observers are equally time-limited and unable to commit themselves because of other pressures. I am sure, however, that there is someone out there willing to take on the task and should you feel able to have a go, even in a temporary capacity, then please do not hesitate to make yourself known to the Director, or have a chat with me first if you want.

To anyone willing to consider the job I would say do not be put off by any notion that you may not be knowledgeable enough. I had undertaken very little serious lunar observing when I took on the job, having previously concentrated on other areas of Astronomy, but have looked, listened, observed and learned from others. In any event, the skills required for the post are largely administrative, involving collation and editing and above all *enthusiasm* for the subject. So if you are already thinking about it **please** step forward and do your bit to help keep the section a going concern into 2007.

Although I love drawing at the eyepiece the very changeable weather this year up to the time of writing (end of May) has meant that the necessary extended clear periods have once again been in short supply each lunation. In the gaps between the clouds I turned my attention to photography instead and played around with my new digital camera. A couple of early efforts are attached, showing some of the dramatic vistas presented by the First Quarter Moon on May 5. The first shows the wonderful Lunar Appennine range and the second the terminator from Ptolemaeus southwards, always a fine sight (South at top). Note that the crater Herschel just north of Ptolemaeus (extreme bottom left of picture) is still in deep shadow, which has receded from the other craters; an indication of how deep this terraced feature is.

Also attached is a very nice shot of another favourite target crater, Theophilus, sent in by Paul Brierley. An image secured by Paul on 3 May at 18.40 with his 300mm Newtonian under excellent seeing conditions and showing the central mountain peaks to great advantage.

Lastly, although we are now in the traditional 'summer recess' do not forget that July and August are the best, indeed the only, months of the year, in which to successfully observe the waning crescent Moon after Last Quarter. If you find yourself able to observe in the pre-dawn sky do take the opportunity to see the Moon and some of its major features under opposite lighting for a change - quite an unusual sight.



FROM THE DIRECTOR

Colin Ebdon has done some fantastic work for the Section, both sending regular reports for the LSC, and producing the “New Moon”, but as you have read, is now stepping down from the post. I am sure that I speak on behalf of all Section members in thanking him for all of his hard work, and I am pleased to say that he will continue to observe the Moon and remain an active Section member.

This does mean that the post is open. Any member who is interested in taking over may apply, but I must have any applications by Wednesday 21st June, in time for the exhibition meeting. Please e-mail me as soon as possible.

With regard to the Exhibition meeting (24th June), I must receive any last minute items for display by Tuesday the 21st if paper, or Wednesday 22nd if electronic.

Finally can I thank the co-ordinators, who send in regular reports; and those members who persevere to send in observations that provide the material for those reports to be written.

Alan Wells

A list of grazing occultations and a map of graze tracks for the second half of 2006 are included in this issue. No grazing occultations are predicted for the sunny days and bright nights of July(!). However, if you want a challenge and are at home, you might like to have a go at the daylight Pleiades occultations on the morning of Thursday 20th July between about 0920 and 1130 **BST**, and the daylight occultations of Mars by the 2-day-old thin crescent moon (disappearance and reappearance) in the early evening of Thursday 27th July. The predictions for these are in last month's LSC. If you try these, please let me know how you get on.

Predictions for 52°27'41.4"N 1°44'44.0"W Birmingham - August 2005

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		
4/20	04	04	/D	FK5	620	48	2.9	B0	74+	119	-2	9	183	36S	150	142	-.9	-.5	163618.4-281357
4/20	56	16	/R	FK5	620	46	2.9	B0	74+	119	-8	8	195-48S	233	226	-1.3	-.2	163618.4-281357	
13/00	58	20	/R	PPM	143658	75	7.8	F0	82-	130		34	137	84S	239	261	-.8	1.4	3550.0 41959
13/23	18	36	/R	PPM	117329	85	7.2	A0	73-	117		20	98	19S	175	196	.6	3.1	12619.8 102636
14/03	48	08	/RV	PPM	117436	65	8.3	K5	71-	115	-8	49	172	83N	254	274	-1.1	.6	13254.9 115506
15/01	02	43	/RJ	PPM	118163	87	6.8	A0	61-	103		32	105	30S	191	209	.3	3.0	22255.4 165407
15/03	40	56	/R	PPM	118231	65	8.3	G0	60-	102-10	52	148	58S	219	237	-.7	1.8	22705.3 173746	
17/03	57	51	/R	PPM	93432	66	7.7	B9	38-	76	-8	49	114	63S	234	243	-.6	2.0	42054.3 255041
18/03	08	59	/RC	PPM	94237	65	8.7	F5	28-	64		35	89	75N	283	288	-.6	1.2	51745.2 274626
19/03	11	37	/R	PPM	95676	76	8.0	K2	20-	53		27	79	61S	247	245	.0	2.2	61619.1 275141
19/04	10	41	/R	PPM	95731	76	7.4	A0	19-	52	-7	36	90	84S	270	268	-.5	1.5	61824.3 280022
19/04	32	49	/R	PPM	95753	75	8.0	K0	19-	52	-4	39	94	88N	278	276	-.7	1.2	61911.7 280316
20/01	52	02	/RK	PPM	97120	95	7.9	K0	13-	41		8	56	26S	219	213	1.6	3.6	71003.5 263051
20/02	38	03	/R	FK5EXT	2553	89	5.6	A2	13-	41		14	64	66N	306	300	-.1	.8	71146.8 265052
20/03	07	32	/RX	PPM	97190	96	7.8	K0	12-	41		18	70	45S	238	231	.5	2.7	71255.0 263319
21/02	48	58	/R	PPM	98323	85	8.4	G5	7-	30		7	59	84S	284	273	.3	1.3	80550.4 241027
21/03	18	19	/R	PPM	98352	95	8.7	F5	7-	30		11	64	82S	282	271	.2	1.3	80659.7 240749
21/03	51	08	/R	PPM	98372	95	8.5	K0	7-	30-10	15	70	62S	262	251	.2	2.0	80814.0 240005	

A letter in the "D" column indicates a possible double star. See LSC 35, 5 (May 1999) for comments on recording observations using the new format predictions.

Grazing Occultations, UK and Ireland, July-December 2006, Magnitude <= 7.0
See accompanying graze track map in this LSC

TRACK NO.	DATE (2005)	USNO REF:	SAO/PPM REF:	D	MAG	%SUN-LIT	L	W.U.T. HH	M.M	CUSP ANGLE	T	STAR NAME	MAG1	MAG2	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			

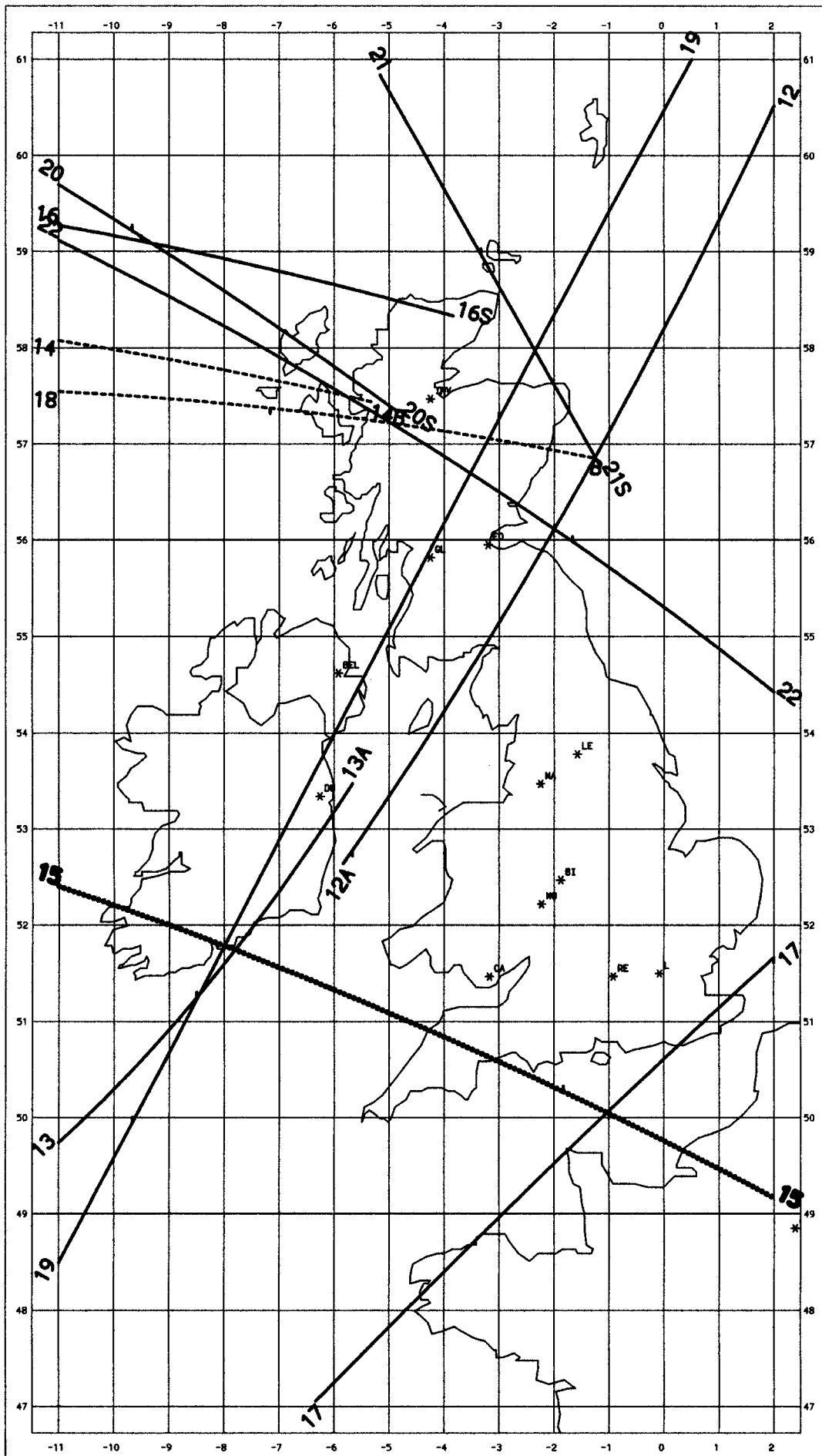
'D' column after PPM indicates double star code. 'W.U.T.' = Start UT of west end of track

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"

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” and “GRAZEREG” programs.

GRAZING OCCULTATIONS UK/IRELAND JULY-DECEMBER 2006
 SEE ACCOMPANYING LIST IN THIS LSC (JULY 2006) FOR DETAILS

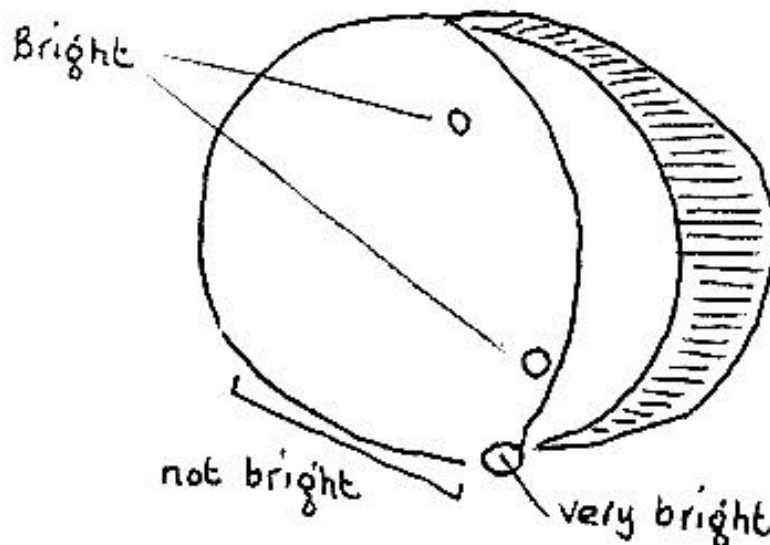


Observations for May were a bit lean but were received from: Michael Amato (West Haven USA), Alan Heath (UK), and Rod Hobbs (UK). I was also emailed by Piergiovanni Salimberri (GLT, Italy) to report an observation by Guy Jasmin (Quebec, Canada) on 2003 Apr 10 UT(?) 20:40 concerning an event inside Alphonsus crater that lasted 5 minutes. So if anybody was observing back then in 2003, please get in contact. Note that the time given may be local time and not UT? My regards to Piergiovanni who has been recovering from a couple of broken vertebra. Also readers may like to know that my mother, Marie Cook, has not been able to observe for several months due to breaking her wrist, but should be back in action soon. So my regards go out to both observers and we wish them a speedy recovery.

I have also been contacted by Stephen Taylor (MD, USA) who is interested in participating in the SMART-1 impact observations. I will try to get all relevant details together by the next newsletter, suffice to say that ALPO observers should be contacting Brian Cudnik to express an interest. But to re-iterate SMART-1 is due to impact on the Moon on Sep 03 2006 at 02:00UT with a 7 hour uncertainty. A 5-10m diameter crater is expected and the expected ejecta area will be ~25sq km resulting in a temporary obscuration. Unfortunately this is on the dark side, but might just be visible in small telescopes if some of this ejecta makes it into sunlight? There will be some opportunities (Jul 10-11) to do some test runs and I will announce these to those who have expressed an interest. Before thinking about observing this impact though in Sep, please do check whether the Moon will be above your horizon on the date and time in question!

Both Alan Heath (Long Eaton, UK) and Rod Hobbs (Holt, UK) had a go (independently) at re-observing one of Jean et al's TLP's in Aristillus from 1970 Apr 14th. The original 1970's observation was: "North wall of Aristillus very Bright – telescope 4" refractor, Montreal, Canada". The same illumination (solar altitude 5 deg) and libration re-occurred on 2006 May 5th from the UK and Rod observed from 20:01-20:11 UT and Alan observed at 20:10 and 20:50 UT. Rod's observational notes (5.5" f/7 refractor, S=III) state: "Brilliant, roughly linear area within the illuminated wall, with isolated brilliant point around the wall to south, also within the illuminated area. This point might be a small crater in the wall that is visible on high resolution photographs. One of the central peaks faintly visible as a point within the shadow." Interestingly enough Alan Heath Alan (Celestar 8", x200, S=II-III) reported: the north wall was not particularly bright, but instead there was a very bright spot on the north wall. This spot can be seen in the Kuiper photographic atlas (C2-b) but in the atlas is not quite as bright. So I wonder if Jean et al. got confused between the bright spot on the north and saying that the north wall was very bright?

Alan Heath's Sketch of Aristillus from 2006 May 05 - north towards the bottom



The following repeat illumination and libration events for UK observers occur for July - the Aristarchus area is a favorite target for this month so please look out for colour using colour filters or CCDs capable of capturing high resolution colour images. Also searching for the pseudo peak on the floor of Herodotus is especially important...

Event: Herodotus (Bartlett, 1971 Jul 05) can be seen on/from (UT): 2006 Jul 07 (20:24-20:25) - [*Can you see any pseudo peak on the floor?*]

Event: Aristarchus (Foley, 1982 Nov 27) can be seen on/from (UT): 2006 Jul 07 (22:05-23:34) - [*Any sign of colour?*]

Event: Aristarchus (Bartlett, 1964 Oct 19) can be seen on/from (UT): 2006 Jul 08/09 (22:10-00:01) - [*Can you see a blue glare on the eastern part of the floor?*]

Event: Aristarchus (Barcroft, 1939 Dec 27) can be seen on/from (UT): 2006 Jul 11/12 (23:26-02:14) - [*Can you see a faint bluish mist on the inner west wall?*]

Event: Aristarchus (Smith, 1969 May 03) can be seen on/from (UT): 2006 Jul 12 (03:16-04:03) - [*Is there any bluing effect around the crater?*]

Event: Plato (Kelsey, 1966 Sep 02) can be seen on/from (UT): 2006 Jul 12/13 (22:41-00:58) - [*Can you confirm that a landslip area on the West looks slightly out of focus?*]

Event: Alphonsus (Whippey, 1966 Sep 02) can be seen on/from (UT): 2006 Jul 12 (22:44-22:51) - [*Look out for weak glows and also for evidence of flashes from craterlets/spots coming in/going out of focus in the seeing*]

Event: Gassendi (Moseley, 1966 Sep 02) can be seen on/from (UT): 2006 Jul 12 (23:09-23:23) - [*Look for red colour on or near the central peak*]

Event: Aristarchus (Kozyrev, 1961 Nov 27) can be seen on/from (UT): 2006 Jul 12/13 (23:11-00:12) - [*Look out for colour on/around the central peak*]

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!

Dr Anthony Cook, School of Computer Science & IT, Nottingham University, Jubilee Campus, Wollaton Road, Nottingham, NG6 1BB, UNITED KINGDOM. Email: acc@cs.nott.ac.uk

SO YOU THINK YOU HAVE PROBLEMS...

I apologise profusely for the problems with the website over the past year. As you know, I moved from Sheffield to a remote bit of Moray (overlooking the Findhorn Bay, with views to the mountains to the north and west) last August, although the house went on the market in May. Three days before we moved, and after we had paid the large removal fee, our buyers pulled out. We were committed to the move, so did so. We sold again very quickly, but again, in mid-September just before exchange, the buyers decided that they liked another property better, and pulled out. We sold yet again in early October, but the chain was extensive, and we encountered every possible problem, and a few we thought were impossible. As I write this on 3 June 2006, we have still not exchanged! Being 450 miles away has its advantages. If I was there, I'd either have gone mad, or committed serious assault on various estate agents, not to mention "buyers". As it is, during the day I go out of the door and look at the mountains and sea. And at night I go out of the door and look upwards. Need I say more? Believe me, it is better than pills!

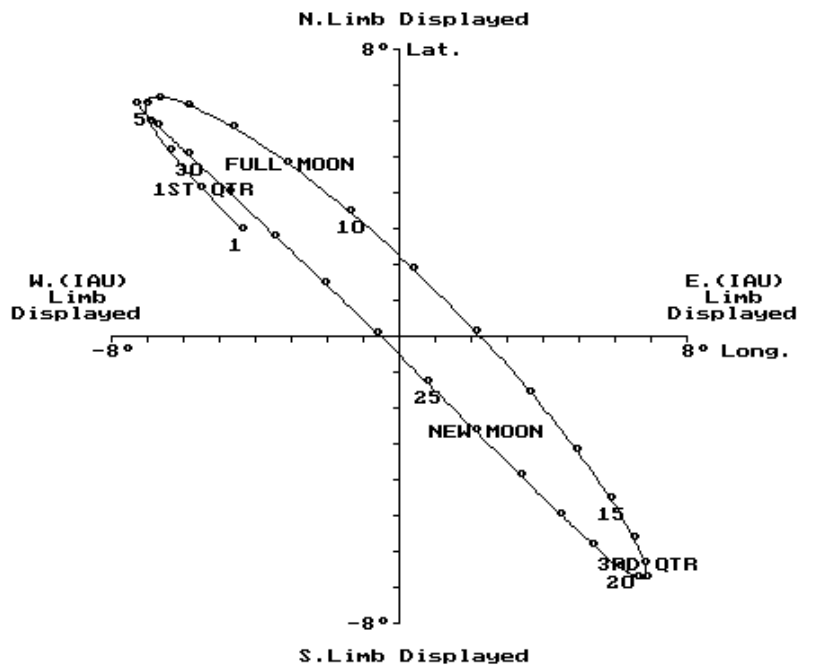
The other main problem until recently was the inability to connect to the internet at anything better than 31.2Kbps dial-up. Broadband is present in nearby properties, but BT maintained it was impossible to get it to me, despite the same telegraph pole being used by three others that could get it. Since every other Broadband provider tests the line using BT, there was an impasse which lasted for seven months. Finally we cracked it by going to Utility Warehouse (how they did it I neither know nor care), so now I have 512Kbps broadband, which will enable me to update the website. (The slight caveat here is that the connection is a touch spasmodic, but hey...)

Continued on page 7

Date	Libration amount \emptyset	PA \emptyset	Feature presented
1.0	6.1	51	Lavoisier*
2.0	7.7	50	Lavoisier*
3.0	9.1	49	Lavoisier*
4.0	10.1	47	Bunsen*
5.0	10.5	46	Bunsen*
6.0	10.4	43	Gerard*
7.0	9.7	41	Galvani*
8.0	8.5	37	Repsold*
9.0	6.7	31	Xenophanes
10.0	4.7	20	Desargues
11.0	2.8	354	de Sitter
12.0	2.4	296	Liapunov*
13.0	3.9	259	Brunner*
14.0	5.7	246	Hecataeus*
15.0	7.3	239	Barnard*
16.0	8.4	235	Abel*
17.0	9.2	233	Abel*
18.0	9.4	231	Gum*
19.0	9.3	230	Gum*
20.0	8.7	230	Gum*
21.0	7.7	229	Gum*
22.0	6.4	229	Gum*
23.0	4.8	230	Gum*
24.0	3.0	232	Gum*
25.0	1.1	240	Barnard
26.0	1.0	35	Volta*
27.0	3.1	44	Gerard*
28.0	5.1	46	Gerard*
29.0	6.9	47	Bunsen*
30.0	8.5	47	Bunsen*
31.0	9.8	47	Bunsen*

LUNAR LIBRATIONS - August 2006

Geocentric: —○—○— The markers show 0:00H UT



Program by Bob Roberts.

Observer at: Lat. 51.0 \emptyset N, Long. 1.0 \emptyset W

* indicates that the feature is not illuminated.

What I need is material. Raffaello kindly sent me some last May, (2005!), which I'm aiming to upload shortly. I know that there are more images which people are anxious to have uploaded, but so far I haven't received them. There is also a suggestion that we should have a message board, or forum, on the site. I agree that this is an excellent suggestion, but it would need a 'moderator' to screen the comments. So how about it, people? Anyone willing to take on the task?

On another front, being the Computing Co-ordinator, I feel it is worth commenting that, due to my move to a (very) small cottage whilst we attempt to get planning permission to build a slightly larger cottage, I have had to forget a 19-inch CRT screen, attached to a reasonably-specified desktop PC, and also a decent-sized television. What I did, was to combine the two functions of monitor and screen by buying an LG Flatron L193ST which provides me with everything. I put the desktop in store and am currently using a borrowed Toshiba Satellite Pro A10 laptop, which uses the Flatron as its external screen. I have to say that the experience has led me to the conclusion that I will not, even when I have more space, be going back to a desktop PC. This present setup is extremely convenient, takes up very little room, and has no real drawbacks. I simply swivel the screen, sit in the other chair, switch modes and watch TV/video/DVD or listen to the radio. A 19-inch LG Flatron from 8 feet is perfectly viewable, very sharp and has the merit of a very wide angle of vision. Anyone who is interested and has limited accommodation, get in touch. **Oh, and don't forget material for the website.**

Mike Carson-Rowland
Computing Co-ordinator

2006 AUG.	Age d	Phase	Earth's		Sun's		R.A. h m	Dec. ø	Rises		Sets		Transit		Alt ø
			Selenographic Longø	Latø	Selenographic Colongø	Latø			h	m	h	m	h	m	
1.0	6.8	0.370	-4.4	3.0	349.3	1.19	13 23	-11.3	12 21	21 56	17 14	22			
2.0	7.8	0.465	-5.6	4.2	1.5	1.17	14 08	-16.4	13 37	22 11	17 59	18			
3.0	8.8	0.564	-6.4	5.2	13.7	1.16	14 56	-21.0	14 56	22 32	18 48	13			
4.0	9.8	0.663	-7.0	6.0	26.0	1.14	15 49	-24.8	16 16	23 03	19 41	10			
5.0	10.8	0.757	-7.1	6.5	38.2	1.12	16 45	-27.4	17 30	23 50	20 40	9			
6.0	11.8	0.844	-6.7	6.7	50.4	1.09	17 46	-28.6	18 29	21 41	9			
7.0	12.8	0.916	-5.9	6.5	62.6	1.07	18 49	-28.0	19 12	00 58	22 43	12			
8.0	13.8	0.968	-4.7	5.9	74.7	1.04	19 52	-25.5	19 42	02 23	23 43	16			
9.0	14.8	0.996	-3.2	4.8	86.9	1.02	20 54	-21.3	20 02	03 58			
10.0	15.8	0.995	-1.4	3.5	99.1	0.99	21 52	-15.7	20 17	05 34	00 39	22			
11.0	16.8	0.965	0.4	1.9	111.3	0.96	22 48	-9.2	20 30	07 07	01 33	29			
12.0	17.8	0.907	2.1	0.1	123.5	0.93	23 41	-2.1	20 42	08 38	02 24	36			
13.0	18.8	0.826	3.6	-1.6	135.7	0.90	00 33	4.9	20 55	10 08	03 14	43			
14.0	19.8	0.728	4.9	-3.2	147.9	0.87	01 25	11.6	21 09	11 37	04 04	50			
15.0	20.8	0.621	5.9	-4.5	160.1	0.85	02 19	17.6	21 28	13 06	04 55	56			
16.0	21.8	0.510	6.5	-5.6	172.3	0.82	03 14	22.5	21 53	14 32	05 49	61			
17.0	22.8	0.402	6.9	-6.3	184.5	0.80	04 10	26.0	22 30	15 52	06 44	64			
18.0	23.8	0.301	6.9	-6.7	196.7	0.78	05 09	28.1	23 21	16 59	07 41	66			
19.0	24.8	0.210	6.6	-6.7	208.9	0.76	06 07	28.6	17 48	08 37	66			
20.0	25.8	0.134	6.1	-6.4	221.2	0.74	07 04	27.6	00 26	18 23	09 31	64			
21.0	26.8	0.074	5.4	-5.8	233.4	0.72	07 58	25.2	01 39	18 47	10 22	61			
22.0	27.8	0.031	4.5	-4.9	245.7	0.70	08 49	21.7	02 56	19 03	11 09	57			
23.0	28.8	0.007	3.4	-3.9	257.9	0.69	09 37	17.3	04 12	19 16	11 53	52			
24.0	0.2	0.001	2.1	-2.6	270.1	0.67	10 22	12.3	05 25	19 26	12 34	47			
25.0	1.2	0.013	0.8	-1.3	282.4	0.65	11 05	6.9	06 36	19 35	13 13	41			
26.0	2.2	0.043	-0.6	0.1	294.6	0.63	11 47	1.3	07 46	19 44	13 52	35			
27.0	3.2	0.090	-2.1	1.5	306.9	0.61	12 29	-4.4	08 56	19 53	14 31	30			
28.0	4.2	0.151	-3.5	2.8	319.1	0.59	13 11	-9.9	10 08	20 03	15 11	24			
29.0	5.2	0.225	-4.8	4.0	331.3	0.57	13 55	-15.1	11 22	20 16	15 54	19			
30.0	6.2	0.311	-5.9	5.1	343.5	0.55	14 41	-19.8	12 39	20 34	16 40	15			
31.0	7.2	0.405	-6.8	5.9	355.8	0.53	15 31	-23.8	13 57	20 59	17 31	11			

SEPT

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

To receive regular copies of this circular, please send stamped addressed envelopes to the Director.

Envelopes at least 110mm by 220mm will ensure no damage in transit.

Members who have Internet access may care to receive their Circulars (colour version) by E mail. Please contact the Director for details.

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:

John Pedler, 25 Beverley Hills Park, Porton Road, Amesbury, Wilts. SP4 7LH.

Tel. No. 01980 622314

Email jhnpedler@aol.com

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