

Observations have been received from Clive Brook, Marie Cook, Maurice Collins (New Zealand) and Albino Carbognani (UAI). On 17th April UTC 19:55 Clive Brook reported seeing the central peak of Theophilus, and other interior details, despite the fact that the crater was completely shadow filled? A possible reason for this could be interior illumination from scattered light off the sunlit rim. Similar effects maybe visible in craters on the terminator, and perhaps could explain some past TLP reports, so please keep a look out. Maurice Collins sent in an old 2000 Oct 4 UTC 08:15-08:50 observation where he noted that the crater Cepheus A was extremely bright – one of the brightest spots he had ever seen on the Moon. I checked various photos and can confirm that the crater does become a bright spot at later phases. Anyway please keep an eye on this crater around phases of 5 days old, and if you recall seeing it very bright this early, please let me know. I have received photometric measurements of Torricelli B, made by Albino Carbognani, during the repeat Saros event on Mar 29/30th. Albino observed 20:36-00:28 UTC (232 minutes) and obtained 16 measurements of Torricelli B with respect to three nearby background mare calibration areas. From this he was able to deduce that there were no changes in brightness beyond +/-5%. David Darling of ALPO has sent me an interesting analysis of a BAA Lunar Section 1987 Sep 5th TLP report concerning a fuzzy area N of Herodotus. It turns out that he was observing at the same time with video, but with the Moon at a greater elevation above the horizon and better seeing. In his video he could resolve that the fuzzy area was in fact an illuminated narrow sliver of Schroter's Valley disappearing and reappearing as the seeing changed. Hence this event can now be regarded as a non-TLP. Unfortunately the table of observation hours from last month appears to have been scrambled in going from the word processor on my computer to John Pedler's computer - at least it looked that way in the electronic circular I received. Therefore here again is the table with March included:

<u>Month</u>	<u>Duration</u>	<u>Observers</u>	<u>Month</u>	<u>Duration</u>	<u>Observers</u>
Nov 2001	1426 min	CB, RB, MC, GN	Feb 2002	150 min	RB, MC, MH, GN
Dec 2001	215 min	CB, RB, MC, GN	Mar 2002	669 min (*)	RB, MC, FF, RB, AC
Jan 2002	217 min	CB, RB, MC, SB	* some of these observations overlap		

In March I attended the Lunar and Planetary Science Conference in Houston, Texas. There were about four presentations of direct interest. Firstly the Lunar Prospector Radon and Polonium results were discussed, and once again Aristarchus came out tops for Radon gas emission. Apparently being a heavy atom, Radon when released hops around ballistically on the surface, and the gas was detected spread over a patch of ~100 km from source. Apollo experiments detected Radon releases associated with lunar quakes. Polonium is a decay product of Radon and has a longer half-life and thus Radon/Polonium ratios can be used to determine whether releases were recent. There was an excellent poster by Brian Cudnik of ALPO about lunar impact flashes. A Japanese school had a poster on how they took narrow-band filter images of the Moon and produced a Ti and Al map of the surface from colour ratio images. B-Ray Hawke, from the University of Hawaii, discussed some known red spots on the lunar surface. There was another paper on the location of magnetic anomalies similar to Reiner Gamma. Two page abstracts from the conference can be found on the internet: <http://www.lpi.usra.edu/meetings/lpsc2002/pdf/program.pdf>

Now its been a year since setting goals for the TLP sub-section and it's time for a review. Alas no telephone TLP alerts were issued over the last year, however past years have also been quiet e.g. 1991. No unambiguous/confirmed TLP were detected either, although the observed dips in the brightness of Proclus on Mar 29th (AM) and the filter reactions in Torricelli B on Mar 29th (PM) are intriguing and need further analysis. Those on our telephone TLP alert team consists of myself, Marie & Jeremy Cook, David Hather, Gerald North, John Knott, Peter Foley, Clive Brook, Wilfried Tost, Raffaello Braga, Fernando Ferri, David Darling, and Maurice Collins. If you wish to join our team, or have changed your tel. No., or even wish to be taken off the list, please let me know?

One problem we face is that really good unambiguous TLP events are very rare. Our routine monitoring of the Moon is currently running at ~50-60 hours per year and the detection and confirmation rates of two NASA studies (the Corralitos Observatory project and the more sensitive (earlier) Project Moonblink) suggest it could be once per hundred-thousand of hours. If this is the case how do we justify looking for TLP? Firstly you can be doing other things whilst watching for TLP such as occasionally making the odd sketch, drawing, or a written description for Colin Ebdon. Secondly consider that there are other areas of astronomy, such as nova and supernova hunting where a similar number of hours must be spent searching. Thirdly NASA is interested in lunar resources and has always taken the subject of TLP observations seriously e.g. ALPO/BAA participation in the Apollo, Clementine and Prospector missions.

Finally I'm going to suggest switching emphasis from routine monitoring of Aristarchus and Gassendi to concentrating our efforts on a second goal from last year i.e. "checking out the normal appearance of TLP sites one or more saros periods on such that the libration and/or illumination are effectively the same". This switch to specific observing features/times will help to establish the normal appearance of features seen under the same illumination and/or libration as TLP in the past. It may also increase our observing time and hence likelihood of detecting TLP.

Now the "monitoring of Earthshine for impact flashes" from last year has not proven popular. One observer, Michael Hather has tried this from the UK, but really we need two or more observers watching at the same time. Therefore in future I will only be suggesting Earthshine observing times during major meteor shower and at least detections of two impact flashes were confirmed during the Leonids in 2001 in the USA. The work towards the goal of "archiving TLP observational reports to CDROM" has begun and an experimental CD was sent to a few Lunar Section committee members. Presently this contains TLP observations from 2001 & 2002, and all of my lunar observations from previous years (including drawings). The idea is that observations of any feature can be selected or sorted by sub-solar longitude thus aiding TLP analysis by finding the nearest normal appearance for a given feature. Finally I would like to add another goal (for myself) – to write up the observational effort for 2001 in the BAA journal.

To start this above mentioned change in observing tactics, below are repeat illumination observing times for Jun/Jul. If you are clouded out on a particular day and you can see the Moon on a day not mentioned below and it is at least 20 deg clear of the horizon, then please observe any feature of your choice. **Bold** text indicates both repeat illumination & libration and so is of higher priority to observe:

15 Jun UTC 21:00-22:00	Mare Crisium (1672 Cassini) &	~22:50 Pitiscus (2001 del Valle)
16 Jun UTC ~21:00	Censorinus (1984 Richardson)	
17 Jun UTC ~21:00	Abulfeda (1985 Foley)	
18/19 Jun UTC 21:00-01:00	Mare Vaporum (1797 Schroter & Olber) &	22:00-01:00 Theophilus (1978 J.Cook)
19/20 Jun UTC 21:00-00:00	Pico & Tycho (1987 Foley & Mobberley)	
20 Jun UTC 21:00-22:00	Proclus (1989 M.Cook)	
22 Jun UTC 21:00-23:00	NE of Philolaus (1948, Baum)	
30 Jun UTC 00:00-03:00	Aristarchus (1978, Foley & Pedler)	
18 Jul UTC 21:00-23:00	Eratosthenes (1954, P.Cattermole)	
26/27 Jul UTC 23:00-04:00	Aristarchus (1983, P. Foley)	
28 Jul UTC 02:00-04:00	Proclus (2001, R.Gray)	
28/29 Jul UTC 02:00-04:00	Aristarchus (1979, P.Foley)	

Please post all letters/TLP reports to: *Mr & Mrs Cook, 6 Lakeland Drive, Frimley, Camberley, Surrey, GU16 8LD*. If you see possible TLP, my contact times (in local UK time) are as follows: WEEK DAYS any time up till 2:15AM on: (USA) 202 633 9748, WEEK DAYS after 3AM or WEEKENDS (any time) on: (USA) 703 751 3365. Tony Cook, PO Box 37012, Center for Earth and Planetary Studies, National Air and Space Museum, MRC-0315, Washington, D.C. 20013-7012. USA. Email: tcook@nasm.si.edu