

Lunar Meteor Schedule and Observing Plan for 2010

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This form outlines the plan to monitor the moon on a regular basis both inside and outside normal annual showers. This effort is made to support existing sustained campaigns to do the same, and to enable them to better add confidence to their impact candidates. Each month, for up to two weeks per month, we are coordinating observations of the Earthshine portion of the moon for background (including the minor showers when they fall during this time) meteor impact flux. A typical run of observations starts three days after New Moon and continues until First Quarter. The run resumes at Last Quarter and continues until three days prior to New Moon. These times are reference times only and are not set in stone: observers are encouraged to observe closer to New Moon if the elevation permits them to do so; and to observe past First Quarter and prior to Last Quarter, if their systems permit them to do so with minimal stray light interference. Observations of the moon during annual showers typically start when the background ZHR rises above 8 and continue until it falls back below 8 (although showers with ZHR of 5 are listed in the table below). During the monthly campaign, much of the annual shower activity will be absorbed into the earthshine activity.

Shower	Activity	Max Date	v_{inf}	r	ZHR
Quadrantids (QUA)	Jan 01 - Jan 12	Jan 03	41	2.1	120
α-Centaurids (ACE)	Jan 28 - Feb 21	Feb 08	56	2.0	6
γ -Normids (GNO)	Feb 25-Mar 22	Mar 14	56	2.4	6
Lyrids (LYR)	Apr 16 - Apr 25	Apr 22	49	2.1	18
π-Puppids (PPU)	Apr 15 - Apr 28	Apr 23	18	2.0	Var
η-Aquariids (ETA)	Apr 19 - May 28	May 06	66	2.4	85
η-Lyrids (ELY)	May 3 - May 12	May 09	44	3.0	3
June Bootids (JBO)	Jun 22 - Jul 02	Jun 27	18	2.2	Var
Piscis Austrinids (PAU)	Jul 15 - Aug 10	Jul 28	35	3.2	5
South. δ -Aquariids (SDA)	Jul 12 - Aug 19	Jul 28	41	3.2	16
α -Capricornids (CAP)	Jul 03 - Aug 15	Jul 30	23	2.5	5
Perseids (PER)	Jul 17 - Aug 24	Aug 12	59	2.2	100
κ -Cygnids	Aug 3 - Aug 25	Aug 18	25	3.0	3
α-Aurigids (AUR)	Aug 25 - Sep 08	Sep 01	66	2.5	6
September Perseids (SPE)	Sep 05 - Sep 17	Sep 09	64	3.0	5
Draconids (DRA)	Oct 06 - Oct 10	Oct 08	20	2.6	Var
Orionids (ORI)	Oct 02 - Nov 07	Oct 21	66	2.5	30
Southern Taurids (STA)	Sep 25 - Nov 25	Nov 05	27	2.3	5
Northern Taurids (NTA)	Sep 25 - Nov 25	Nov 12	29	2.3	5
Leonids (LEO)	Nov 10 - Nov 23	Nov 17	71	2.5	20
α -Monocerotids (AMO)	Nov 15 - Nov 25	Nov 21	65	2.4	Var
Phoenicids (PHO)	Nov 28 - Dec 09	Dec 06	18	2.8	Var
Puppid/Velids (PUP)	Dec 01 - Dec 15	(Dec 07)	40	2.9	10
Coma Berenicids (CBE)	Dec 05 - Jan 31	Dec 20	65	3.0	5
Geminids (GEM)	Dec 07 - Dec 17	Dec 14	35	2.6	120
Ursids (URS)	Dec 17 - Dec 26	Dec 22	33	3.0	10
Coma Berenicids (COM)	Dec 12 - Jan 23	Dec 29	65	3.0	5

The table above, from the Working list of meteor showers published annually at www.imo.net (the International Meteor Organization) shows information about most of the annual showers. Entries in bold delineate a shower that is favored for lunar activity. The shower name and IMO designation is given in the first column. The interval of activity is presented in the second column with the date of maximum (Earth-based) in the third column. The velocity of the meteoroids at infinity is presented in the next column, which is followed by the population index. The population index, r , is a measure of the distribution of meteoroid sizes at maximum. A larger value of r indicates a larger proportion of smaller particles, and is less favorable for lunar meteor studies. Smaller r -values indicate more large particles, translating into a greater probability of observing lunar impacts. Finally, the Zenithal Hourly Rate, as observed on Earth, is given.

We encourage observers to watch the moon a day or two before and after the predicted peak date. The difference in ZHR peak time from Earth to the moon is up to ± 7 hours...later for evening phase, earlier for morning phase. Some showers, such as the Orionids, have a broader peak, while others like the Quadrantids have a narrower peak. The dates of monthly observations are given in the next table. Routine monthly observations usually take place from 3 days after New Moon to First Quarter, then Last quarter to 3 days prior to new moon. The actual cutoff date near New Moon depends on ecliptic angle for a given location.

Last Quarter	Observing Interval	New Moon	Observing Interval	First Quarter
Jan. 7	Jan. 7 - 12	Jan. 15	Jan. 18 - 23	Jan. 23
Feb. 5	Feb. 5 - 11	Feb. 14	Feb. 17 - 22	Feb. 22
Mar. 7	Mar. 7 - 12	Mar. 15	Mar. 18 - 23	Mar. 23
Apr. 6	Apr. 6 - 11	Apr. 14	Apr. 17 - 21	Apr. 21
May 6	May 6 - 11	May 14	May 17 - 20	May 20
June 4	June 4 - 9	June 12	June 15 - 19	June 19
July 4	July 4 - 8	July 11	July 14 - 18	July 18
Aug. 3	Aug. 3 - 7	Aug. 10	Aug. 13 - 16	Aug. 16
Sep. 1	Sep. 1 - 5	Sep. 8	Sep. 11 - 15	Sep. 15
Oct. 1	Oct. 1 - 4	Oct. 7	Oct. 10 - 14	Oct. 14
Oct. 30	Oct. 30 - Nov. 3	Nov. 6	Nov. 9 - 13	Nov. 13
Nov. 28	Nov. 28 - Dec. 3	Dec. 5	Dec. 8 - 13	Dec. 13

Any questions concerning this plan can be directed to the ALPO Lunar Meteoritic Impact Search Coordinator, Mr. Brian Cudnik, at cudnik@sbcglobal.net.