What’s Up, Doc? †
October 2023

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This document tells you what objects are visible this next month for many of the Astronomical League Clubs. If you are working on one of the more advanced club, then I assume that you are tracking where your objects are all the time. I have concentrated on the common and starter level clubs. This information is based on 9 PM Pacific Daylight Time.

Naked-Eye Clubs

Meteors

<table>
<thead>
<tr>
<th>Shower</th>
<th>Duration</th>
<th>Maximum</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orionids</td>
<td>10/15 to 10/29</td>
<td>10/21</td>
<td>Major</td>
</tr>
<tr>
<td>Arietids</td>
<td>9/7 to 10/27</td>
<td>10/8 &amp; 10/9</td>
<td>Minor</td>
</tr>
<tr>
<td>Delta Aurigids</td>
<td>9/22 to 10/23</td>
<td>10/6 to 10/15</td>
<td>Minor</td>
</tr>
<tr>
<td>Eta Cetids</td>
<td>9/20 to 11/2</td>
<td>10/1 to 10/5</td>
<td>Minor</td>
</tr>
<tr>
<td>October Cetids</td>
<td>9/8 to 10/30</td>
<td>10/5 &amp; 10/6</td>
<td>Minor</td>
</tr>
<tr>
<td>October Cygnids</td>
<td>9/22 to 10/11</td>
<td>10/4 to 10/9</td>
<td>Minor</td>
</tr>
<tr>
<td>Draconids</td>
<td>10/6 to 10/10</td>
<td>10/7</td>
<td>Minor</td>
</tr>
<tr>
<td>Epsilon Geminids</td>
<td>10/10 to 10/27</td>
<td>10/18 &amp; 10/19</td>
<td>Minor</td>
</tr>
<tr>
<td>Northern Piscids</td>
<td>10/5 to 10/16</td>
<td>10/12 &amp; 10/13</td>
<td>Minor</td>
</tr>
<tr>
<td>Sextantids</td>
<td>9/24 to 10/9</td>
<td>9/30 to 10/4</td>
<td>DAYTIME</td>
</tr>
</tbody>
</table>

Constellations, Northern Skies – any night, any time, anywhere, the darker the sky the better.

Last Chance this cycle: Serpens, Ophiuchus, Sagittarius, Corona Australis.
Transit: Cepheus, Lacerta, Cygnus, Vulpecula, Pegasus, Delphinus, Equuleus, Aquarius, Capricorn, Piscis Austrinus, Microscopium


Binocular Clubs

Binocular Messier – Monthly highlights include:

Easy – 2, 8, 10, 11, 12, 13, 15, 16, 17, 18, 22, 23, 24, 25, 27, 29, 31, 34, 39, 52, 55, 92, 103.

Medium – 14, 28, 30, 33.

Hard – 9, 26, 32, 54, 56, 71, 75, 101.

Big Binoculars – 69, 70, 72, 102, 110.

Deep Sky Binocular – Monthly highlights include (by Astronomical League numbers):

1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60.

Other Clubs

Messier

In addition to those listed under Binocular Messier, check out: 21, 57, 73, 74, 76.

Caldwell

6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 27, 28, 30, 33, 34, 37, 42, 43, 44, 47, 51, 55, 56, 57, 62, 63, 65, 68.

Double Star (by Astronomical League numbers):

1, 2, 4, 6, 7, 10, 12, 13, 15, 19, 21, 24, 26, 30, 31, 33, 35, 36, 37, 38, 39, 41, 43, 44, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 58, 60, 61, 62, 63, 64, 66, 67, 68, 69, 70, 71, 72, 84, 88, 89, 90, 96.
Other Clubs (of the Solar System)

**Solar System** – These are the tasks that can be done this month:
- **Sun** – Any clear day is a good time to get those sunspots. Sunset is at 18:21.
  - The Maria requirement can be done any time the moon is visible. Look before 10/7 and after 10/21 for the fullest views.
  - The Highlands requirement can be done at the same time.
  - The Crater Ages requirement is best done on 10/20, 10/21.
  - The Scarps requirement is best done on 10/22.
- Occultations occur all the time, the bright ones can be found on the internet. Objects disappear on the east side of the moon.

**Asteroids** – Course Plotting and Measuring Movement requirements can be done at any time on any asteroid.
- **Mercury** and **Venus** are not visible in the evening sky.
- **Mars** is in Virgo and sets at 18:39 mid-month.
- **Ceres** is in Virgo and sets at 20:16 mid-month.
- **Jupiter** is in Aries and rises at 19:10 mid-month.
- **Saturn** is in Aquarius and is up all evening mid-month.
- **Uranus** is in Aries and rises at 19:27 mid-month.
- **Neptune** is in Pisces and is up all evening mid-month.
- **Pluto** is in Sagittarius and is up all evening mid-month.

**Lunar**

Key timings are indicated below:
- New, 10/14 – 4 days, 10/18 – 7 days, 10/21 – 10 days, 10/24 – 14 days, 10/28
- Old moon in new moons arms – before 22:55 on 10/16, ~10% illuminated. (72 hr > New)
- New moon in old moons arms – after 22:55 on 10/10, ~10% illuminated. (72 hr < New)
- Waxing Crescent – before 22:55 on 10/15, ~4% illuminated. (40 hr > New)
- Waning Crescent – after 22:55 on 10/11, ~4% illuminated. (48 hr < New)

**Special Events this month (also see the moon and meteor shower information):**
- 10/2 – Makemake at conjunction
- 10/6 – October Camelopardalids Meteor Shower
- 10/7 – Draconids Meteor Shower
- 10/10 – Lunar apogee
- 10/11 – Delta Aurigids Meteor Shower
- 10/14 – Annular Solar Eclipse in the US
- 10/18 – Epsilon Geminids Meteor Shower
- 10/19 Mercury at superior conjunction
- 10/22 Orionids Meteor Shower
- 10/22 – Venus at dichotomy
- 10/23 – Venus at greatest western elongation
- 10/24 – Leonis Minorids Meteor Shower
- 10/25 – Lunar perigee
- 10/28 – Partial Lunar Eclipse

* - Although these clubs are not detailed in this “What's Up Doc?” handout, you can get information on many of their objects by using the “What's Up Tonight, Doc?” spreadsheet (version 4.1). To get your copy, talk to the Doc, Aaron Clevenson, by sending an email to aaron@clevenson.org.
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