What’s Up, Doc? †
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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. All times are US Central Time.

Naked-Eye Clubs

**Meteors**

<table>
<thead>
<tr>
<th><strong>Shower</strong></th>
<th><strong>Duration</strong></th>
<th><strong>Maximum</strong></th>
<th><strong>Type</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamma Aquarids</td>
<td>9/1 to 9/14</td>
<td>9/7 &amp; 9/8</td>
<td>Minor</td>
</tr>
<tr>
<td>Alpha Triangulids</td>
<td>9/5 to 9/15</td>
<td>9/11 &amp; 9/12</td>
<td>Minor</td>
</tr>
<tr>
<td>Alpha Aurigids</td>
<td>8/25 to 9/6</td>
<td>9/1 &amp; 9/2</td>
<td>Minor</td>
</tr>
<tr>
<td>Eta Draconids</td>
<td>8/28 to 9/23</td>
<td>9/12 &amp; 9/13</td>
<td>Minor</td>
</tr>
<tr>
<td>Gamma Piscids</td>
<td>8/26 to 10/22</td>
<td>9/23 &amp; 9/24</td>
<td>Minor</td>
</tr>
<tr>
<td>Southern Piscids</td>
<td>8/12 to 10/7</td>
<td>9/11 to 9/20</td>
<td>Minor</td>
</tr>
</tbody>
</table>

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

Last Chance this cycle: Draco, Canes Venatici, Bootes, Serpens, Libra, Scorpius, Telescopium.

Transit: Cygnus, Lyra, Sagitta, Vulpecula, Delphinius, Aquila, Scutum, Sagittarius.

New arrivals: Andromeda, Pisces, Pegasus, Aquarius, Microscopium, Piscis Austrinus.

Binocular Clubs

**Binocular Messier** – Monthly highlights include:

Easy – 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18, 22, 23, 24, 25, 27, 29, 31, 39, 52, 55, 92, 103.

Medium – 14, 19, 28, 30, 33, 40, 62, 63, 80, 81, 82, 94.

Hard – 9, 26, 32, 51, 54, 56, 71, 75, 101, 106.

Big Binoculars – 69, 70, 72, 102, 107, 109, 110.

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

1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 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, 76, 108.

**Caldwell**

1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 33, 34, 37, 42, 43, 44, 47, 55, 57, 63, 68, 69, 76, 78.

**Double Star** (by Astronomical League numbers):

1, 4, 7, 9, 10, 12, 13, 14, 15, 18, 21, 22, 26, 29, 31, 35, 36, 37, 38, 39, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 56, 57, 58, 60, 61, 62, 63, 64, 66, 67, 68, 69, 70, 71, 72, 84, 86, 87, 88, 89, 90, 91, 93, 94, 96, 97.
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 mid-month is at 19:27.
Moon:
The Maria requirement can be done any time the moon is visible. Look before 9/21 and after 9/6 for the fullest views.
The Highlands requirement can be done at the same time.
The Crater Ages requirement is best done on 9/5 and 9/6.
The Scarps requirement is best done on 9/7.
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 is not visible in the evening sky this month.
Venus is in Virgo and sets at 19:51 mid-month.
Mars is not visible in the evening sky this month.
Ceres is also in Scorpius and sets at 22:47 mid-month.
Jupiter is in Ophiuchus and sets at 23:46 mid-month.
Saturn is in Sagittarius and sets at 01:49 mid-month.
Uranus is in Aries and rises at 21:26 mid-month.
Neptune is in Aquarius and rises at up all night mid-month.
Pluto is in Sagittarius and sets at 02:19 mid-month.

Lunar (times are shown for Central US Time)
Key timings are indicated below:
New, 8/30 & 9/28 4 days, 9/3 7 days, 9/6 10 days, 9/9 14 days, 9/13
Old moon in new moons arms – before 05:37 on 9/2, ~10 % illuminated. (72 hr > New)
New moon in old moons arms – after 13:26 on 9/25, ~10 % illuminated. (72 hr < New)
Waxing Crescent – before 05:26 on 9/30, ~4 % illuminated. (40 hr > New)
Waning Crescent – after 13:26 on 9/26, ~4 % illuminated. (48 hr < New)

The Astronomical League Observing Programs:
Analemma  ARP Peculiar Galaxies  Asterisms  Asteroids
Binocular Double Star  Binocular Messier  Caldwell  Carbon Star
Comets  Constellation Hunter – North  Constellation Hunter – South  Earth Orbiting Satellite
Dark Sky Advocate  Deep Sky Binocular  Double Star  Globular Clusters
Flat Galaxy  Galaxy Groups & Clusters  Galileo  Master Observer
Herschel 400  Herschel II  Local Galaxy Group & Neighborhood  Multiple Star  NEO
Lunar  Lunar II  Mars  Planetary Nebulae  Planetary Transit
Messier  Meteor  Multiple Star  Southern Skies Binocular  Southern Skies Telescope
Open Clusters  Outreach  Planetesimal Evolution  Universe Sampler
Sky Puppy  Solar System Observers  Stellar Evolution Variable Star  Planetary Transit
Spectroscopy  Sunspotters  Urban
Urban

* - 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. It is also available on the club website.

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