What’s Up, Doc? †
December, 2018
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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 also probably tracking where your objects are all the time. I concentrate on the more common and starter level clubs.

Naked-Eye Clubs

**Meteors** – any night, any time, anywhere, the darker the sky the better. The major meteor showers are shown in **BOLD** (times are local time in Houston, TX):

<table>
<thead>
<tr>
<th>Shower</th>
<th>Duration</th>
<th>Maximum</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geminids</td>
<td>12/7 to 12/17</td>
<td>12/13</td>
<td>Major</td>
</tr>
<tr>
<td>Ursids</td>
<td>12/17 to 12/26</td>
<td>12/22</td>
<td>Moderate</td>
</tr>
<tr>
<td>Coma Berenicids</td>
<td>12/12 to 1/23</td>
<td>12/20</td>
<td>Minor</td>
</tr>
<tr>
<td>Sigma Hydrids</td>
<td>12/3 to 12/15</td>
<td>12/11</td>
<td>Minor</td>
</tr>
<tr>
<td>Monocerotids</td>
<td>11/27 to 12/17</td>
<td>12/8</td>
<td>Minor</td>
</tr>
<tr>
<td>Dec Phoenicids</td>
<td>11/28 to 12/9</td>
<td>12/6</td>
<td>Minor</td>
</tr>
<tr>
<td>Puppids/Velids</td>
<td>12/1 to 12/15</td>
<td>12/6</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: Hercules, Scutum, Aquila, Microscopium.
- Transit: Cepheus, Cassiopeia, Andromeda, Pegasus, Pisces, Aquarius, Cetus, Phoenix, Sculptor.
- New arrivals: Auriga, Taurus, Orion, Eridanus, Fornax, Phoenix.

Binocular Clubs

**Binocular Messier** – Monthly highlights include:
- Easy – 2, 15, 27, 29, 31, 34, 35, 36, 38, 39, 42, 45, 50, 52, 103.
- Medium – 30, 33, 78, 79, 81, 82.
- Hard – 1, 32, 56, 71.
- Big Binoculars – 72, 77, 110.

**Deep Sky Binocular** – Monthly highlights include:
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 38, 47, 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: 43, 57, 74, 76.

**Caldwell**
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 27, 28, 30, 31, 33, 34, 37, 39, 41, 42, 43, 44, 46, 47, 49, 50, 51, 55, 56, 57, 62, 63, 65, 67, 70, 72.

**Double Star**
2, 3, 5, 6, 7, 8, 10, 13, 16, 19, 21, 23, 24, 27, 28, 30, 31, 33, 34, 36, 38, 42, 44, 46, 47, 48, 49, 50, 53, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 88, 89, 90, 95.
Other Clubs (continued)

Planetary – These are the tasks that can be done this month:
Mercury, Venus, Ceres, and Jupiter are not visible in the evening sky.
Sun – Any clear day is a good time to get those sunspots. Sunset is 17:23 at mid-month.
Moon: The Maria requirement can be done any time the moon is visible. Look after 12/14 and
before 12/29 for the best views.
The Highlands requirement can be done at the same time.
The Crater Ages requirement is best done on 12/13 and 12/14.
The Scarps requirement is best done on 12/15.
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. See above to identify the bright ones this month.
Mars is in Aquarius and sets at 23:52 CST mid-month.
Saturn is in Sagittarius and sets at 18:27 CST at mid-month.
Uranus is in Pisces and sets at 02:56 CST at mid-month.
Neptune is in Aquarius and sets at 23:26 CST at mid-month.
Pluto, the Dwarf Planet, is in Sagittarius and sets at 19:14 CST at mid-month.

Lunar
New Moon – 12/7 at 01:20 CST.
Key timings are indicated below:
4 days, 12/11 7 days, 12/15 10 days, 12/18 14 days, 12/22
Old moon in new moons arms – before 01:20 CST on 12/10, 10 % illuminated. (72 hr > New)
New moon in old moons arms – after 01:20 CST on 12/4, 10 % illuminated. (72 hr < New)
Waxing Crescent – before 17:20 CST on 12/8, 3 % illuminated. (40 hr > New)
Waning Crescent – after 01:20 CST on 12/5, 3 % illuminated. (48 hr < New)

The Astronomical League Observing Programs:
Active Galactic Nuclei Advanced Observer Advanced Binocular Double Star Analemma
ARP Peculiar Galaxies (Northern and Southern) Asterism Asteroid
Binocular Double Star Binocular Messier Binocular Variable Star Bright Nebula
Caldwell Carbon Star Comets
Constellation Hunter (North and South) Dark Nebulae Dark Sky Advocate
Deep Sky Binocular Double Star Earth Orbiting Satellite Flat Galaxy
Galaxy Groups & Clusters Galileo Globular Clusters
Herschel 400 Herschel II Local Galaxy Group & Neighborhood Mars
Lunar Lunar II Master Observer (4 levels) Messier
Meteor NEO Observer Occultation
Open Cluster Outreach Planetary Nebulae Planetary Transit
Radio Astronomy Sketching Sky Puppy Solar System Observers
Southern Skies Binocular Southern Skies Telescope Stellar Evolution Sunspotters
Two in the View Universe Sampler Urban Variable Star

* - 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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