

# What's Up, Doc? †

## July 2023 (Pacific Daylight Time)

Dr. Aaron B. Clevenson, Observatory Director, Insuperity Observatory in Humble ISD

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 clubs, 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 Time at about 47° North Latitude (Seattle, WA).

### Naked-Eye Clubs

**Meteors** – any night, any time, anywhere, the darker the sky the better.

<u>Shower</u>	<u>Duration</u>	<u>Maximum</u>	<u>Type</u>
<b>Southern Delta Aquarids</b>	<b>7/14 to 8/18</b>	<b>7/28 &amp; 7/29</b>	<b>Moderate</b>
Alpha Lyrids	7/9 to 7/20	7/14 & 7/15	minor
July Phoenicids	7/9 to 7/17	7/14 & 7/15	minor
Alpha Pisces Asutralids	7/16 to 8/13	7/30 & 7/31	minor
Sigma Capricornids	6/18 to 7/30	7/10 to 7/20	minor
Tau Capricornids	6/2? to 7/29	7/12 & 7/13	minor
Omicron Draconids	7/6 to 7/28	7/17 & 7/18	minor

**Constellation Hunter, Northern Skies (and some Southern Skies)** – any night, any time, anywhere, the darker the sky the better.

Last Chance this cycle: Ursa Major, Leo Minor, Leo, Crater, Corvus.

Transit: Ursa Minor, Draco, Hercules, Corona Borealis, Serpens, Ophiuchus, Libra, Scorpion, Lupus, Norma.

New arrivals: Cepheus, Lacerta, Cygnus, Vulpecula, Sagitta, Delphinus, Equuleus, Aquila, Scutum, Sagittarius, Corona Australis.

**Earth Orbiting Satellites** – Most requirements can be seen naked-eye. Information about all satellite passes required for this certification can be found on the website: [www.heavens-above.com](http://www.heavens-above.com). Be sure to provide accurate latitude and longitude for your observing site.

### Binocular Clubs

**Binocular Messier** – Monthly highlights include:

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

Medium – 14, 19, 28, 40, 49, 53, 62, 63, 64, 80, 81, 82, 83, 94.

Hard – 9, 26, 51, 54, 56, 65, 66, 68, 71, 97, 101, 104, 106.

Big Binoculars – 58, 59, 60, 61, 69, 70, 84, 85, 86, 87, 88, 89, 90, 95, 96, 99, 100, 102, 105, 107, 108, 109.

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

5, 38, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59.

### Other Clubs

#### Messier

In addition to those listed under Binocular Messier, check out: 21, 57, 91, 98.

#### Caldwell

1, 2, 3, 4, 6, 7, 9, 11, 12, 15, 16, 19, 20, 21, 26, 27, 29, 32, 33, 34, 35, 36, 37, 38, 40, 42, 45, 47, 52, 57, 60, 61, 66, 69, 75, 76, 77.

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

1, 4, 9, 10, 11, 12, 13, 14, 15, 17, 18, 20, 22, 25, 26, 29, 31, 35, 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 48, 50, 51, 52, 54, 56, 57, 58, 59, 62, 64, 66, 67, 68, 69, 70, 71, 74, 84, 86, 87, 91, 92, 93, 94, 96, 97, 100.

## 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 2103 at mid-month.

Moon:

The Maria requirement can be done any time the moon is visible. Look before 7/10 or after 7/24 for the fullest views.

The Highlands requirement can be done at the same time.

The Crater Ages requirement is best done on 7/23 or 7/24.

The Scarps requirement is best done on 7/25.

Occultations occur all the time, the bright ones can be found on the internet. Objects disappear on the East side of the moon.

Jupiter and Uranus not available in the evening sky mid-month.

Mercury is in Cancer and sets at 2154 mid-month.

Venus is in Leo and sets at 2216 mid-month.

Ceres is in Virgo and is up all night mid-month.

Mars is in Leo and sets at 2247 mid-month.

Saturn is in Aquarius and rises at 2257 mid-month.

Neptune is in Pisces and rises at 2336 mid-month.

Pluto is in Sagittarius and rises at 2132 mid-month.

Asteroids – Course Plotting and Measuring Movement requirements can be done at any time on any asteroid.

## Lunar

Key timings are indicated below (times are Pacific Time):

New, 6/28      4 days, 7/2      7 days, 7/5      10 days, 7/8      14 days, 7/12

Old moon in new moons arms – before 1432 on 7/20, ~10 % illuminated. (72 hr > New)

New moon in old moons arms – after 1432 on 7/14, ~10 % illuminated. (72 hr < New)

Waxing Crescent – before 1432 on 7/19, ~4 % illuminated. (48 hr > New)

Waning Crescent – after 1432 on 7/15, ~4 % illuminated. (48 hr < New)

## Major Astronomical Events this Month:

- 7/1 – Neptune is Stationary
- 7/4 – Lunar Perigee
- 7/6 – Earth at Aphelion
- 7/10 – July Perseids Meteor Shower
- 7/20 – Venus is Stationary and Lunar Apogee
- 7/22 – Pluto at Opposition
- 7/28 – Piscis Austrinids Meteor Shower and July Draconids Meteor Shower
- 7/29 – Delta Aquarids Meteor Shower
- 7/30 – Southern Delta Aquarids Meteor Shower and Alpha Capricornids Meteor Shower

\* - Although these Observing Programs 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](mailto:aaron@clevenson.org). It is also available on the club website.

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**Insperty Observatory, 2505 S. Houston Avenue, Humble, TX: [www.humbleisd.net/observatory](http://www.humbleisd.net/observatory)**