

## A. L. OBSERVING PROGRAMS OBJECT DUPLICATIONS

Compiled by Bill Warren

Note: This report is limited to the following A. L. observing programs: **Arp Peculiar Galaxies; Binocular Messier; Caldwell; Deep Sky Binocular; Galaxy Groups & Clusters; Globular Cluster; Herschel 400; Herschel II; Lunar; Messier; Open Cluster; Planetary Nebula; Universe Sampler; and Urban.** It does *not* include the other A. L. observing programs, none of which contain duplicated objects.

Like the A. L. itself, I'm using constellation names, not genitives (e.g., Orion, not Orionis) with double stars as an aid for beginners who might be referencing this.

-Bill Warren

Considerable duplication exists among the various A.L. observing programs. In fact, no less than 228 objects (8 lunar, 14 double stars and 206 deep-sky) appear in more than one program. For example, M42 is on the lists of the Messier, Binocular Messier, Universe Sampler and Urban Program.

Duplication is important because, with certain exceptions noted below, if you observe an object once you can use that same observation in other A. L. programs in which that object appears.

Of the 110 Messiers, 102 of them are also on the **Binocular Messier** list (18x50 version). To qualify for a Binocular Messier pin, you need only to find any 70 of them. Of course, they are duplicates only when you observe them in binocs; otherwise, they must be observed separately.

Among its 100 targets, the **Urban Program** contains 41 Messiers, 14 Double Stars and 27 other deep-sky objects that appear on other lists. However, they are duplicates only if they are observed under light-polluted conditions; otherwise, they must be observed separately.

The same holds true for **Constellation Hunter, Lunar** (naked-eye) and **Universe Sampler** (naked-eye) objects: binocular or telescopic observations do not count.

Electronic GoTo mechanisms are expressly forbidden with the **Caldwell, Constellation Hunter, Galileo, Lunar, Messier, Sky Puppy, Universe Sampler** and binocular programs. In other cases, the use of mechanical or electronic finders is acceptable. Go to the A. L. web site and read the rules and requirements for any program you wish to pursue.

Binocular observations are acceptable for any of the following: **Arp Peculiar Galaxies, Binocular Messier, Caldwell, Deep Sky Binocular, Galaxy Groups & Clusters, Globular Cluster, Herschel 400, Herschel II, Lunar and Lunar II** (binocular or telescopic), **Messier, Open Cluster, Planetary Nebulae, Urban** and **Universe Sampler** (telescopic).

Here, then, are the A. L. objects that appear on more than one observing program list:

**Lunar Club/Universe Sampler (naked-eye) Duplications (4):** Mare Crisium, Mare Serenitatis, Mare Imbrium and Mare Humorum.

**Lunar Club/Universe Sampler (binocular or telescopic) Duplications (4):** the Apennines Mtns. and craters Aristoteles, Copernicus and Grimaldi.

**Messiers Duplicated in the Arp Peculiar Galaxies Club (11):** M32 (Arp 168), M49 (Arp 134), M51 (Arp 85), M60 (Arp 116), M65 (Arp 317), M66 (Arps 16, 317), M77 (Arp 37), M82 (Arp 337), M87 (Arp 152), M90 (Arp 76), and M101 (Arp 26).

**Messiers Duplicated in the Binocular Messier Club (102):** M1-20, M22-42, M44-56, M58-72, M75, M77-90, M92-97 and M99-110.

**Messiers Duplicated in the Galaxy Groups & Clusters Club (8):** M49, M60, M66, M86-87, M100, M105-106.

**Messiers Duplicated in the Globular Cluster Club (29):** M2-5, M9-10, M12-15, M19, M22, M28, M30, M53-56, M62, M68-72, M75, M79-80, M92 and M107.

**Messiers Duplicated in the Herschel 400 Club (15):** M20, M33, M47, M48, M61, M76, M82, M91, M102, and M104-M109.

**Messiers Duplicated in the Open Cluster Club (9):** M7, M11, M26, M38, M44, M47-M48, M67 and M103.

**Messiers Duplicated in the Planetary Nebula Club (4):** M27, M57, M76 and M97.

**Messiers Duplicated in the Urban Club (41):** M2-8, M10-13, M15, M17, M22, M27, M30-31, M35-39, M41-42, M44-45, M48, M50, M57, M62, M64, M67, M77, M81-82, M84, M86-87, M92, M94 and M104.

**Messiers Duplicated in the Universe Sampler (naked-eye) (11):** M4-8, M11, M22, M31, M41-42 and M44.

**Messiers Duplicated in the Universe Sampler (telescopic) (4):** M1, M27, M51 and M57.

**Double Stars Duplicated in the Double Star and Urban Club (9):** Eta Cassiopeia; Gamma Aries; Beta Monoceros; Theta Orion (the Trapezium); Gamma Leo; Beta Scorpius; Epsilon Lyra (the Double-Double); Gamma Delphinus; and Delta Cepheus.

**Double Stars Duplicated in the Double Star and Universe Sampler Club (2):** Theta Taurus and Alpha Capricornus.

**Double Stars Duplicated in all three clubs (3):** Gamma Andromeda; Zeta Ursa Major (Mizar and Alcor); and Beta Cygnus.

**Deep-Sky Objects (other than Messiers) Duplicated (104):**

(Note: PN=planetary nebula; SG=spiral galaxy; EG=elliptical galaxy; EN=emission nebula; IG=irregular galaxy; GC= globular cluster; OC=open cluster; and SNR=supernova remnant.

Regarding observing clubs: A=Arp Peculiar Galaxies; C=Caldwell; DSB=Deep Sky Binocular; GG&C= Galaxy Groups & Clusters; GC=Globular Cluster; H400=Herschel 400; H2=Herschel 2; OC=Open Cluster; PN=Planetary Nebula; UC=Urban Club; and US=Universe Sampler. Caldwell and Arp numbers are given.

NGC 40 (PN, Cep): C2, H400, PN

NGC 129 (OC, Cas): DSB, H400

NGC 185 (EG, Cas): C18, H400

NGC 246 (PN, Cet): C56, H400, PN  
NGC 247 (SG, Cet): C62, H400  
NGC 253, Sculptor Galaxy (SG, Scl): C65, DSB, H400  
NGC 457, Owl Cluster (OC, Cas): C13, DSB, H400, US  
NGC 559 (OC, Cas): C8, H400  
NGC 663 (OC, Cas): C10, DSB, H400, UC  
NGC 752 (OC, And): C28, DSB, H400, UC  
NGC 772 (SG, Ari): A78, H400  
NGCs 869/884, the Double Cluster (OC/OC, Per): C14, DSB, H400, UC, US  
NGC 891 (SG, And): C23, H400  
NGC 1023 (SG, Per): A135, H400  
NGC 1097 (SG, For): A77, C67  
NGC 1342 (OC, Per): DSB, H400, OC, UC  
NGC 1528 (OC, Per): DSB, H400, US  
NGC 1647 (OC, Tau): DSB, H400, UC  
NGC 1662 (OC, Ori): DSB, H2, OC  
NGC 1817 (OC, Tau): DSB, H400, UC  
NGC 1907 (OC, And): DSB, H400  
NGC 1961 (SG, Cam): A184, H400  
NGC 2169, "37" asterism (OC, Ori): DSB, OC, UC, US,  
NGC 2232 (OC, Mon): DSB, H400, OC, UC, US  
NGC 2244 (OC, Mon): C50, DSB, H400, OC, UC  
NGC 2251 (OC, Mon): DSB, H400  
NGC 2261, Hubble's Variable Nebula (EN, Mon): C46, H2  
NGC 2264, the Christmas Tree Cluster (OC, Mon): DSB, H400, UC  
NGC 2281 (OC, Aur): DSB, H400, UC  
NGC 2343 (OC, Mon): DSB, H400  
NGC 2360 (OC, CMa): C58, DSB, H400  
NGC 2362, Tau Canis Major Cluster (OC, CMa): C64, H400  
NGC 2392, Eskimo or Clown Face Nebula (PN, Gem): C39, H400, PN, UC  
NGC 2403 (SG, Cam): C7, DSB, H400  
NGC 2419 (GC, Lyn): C25, GC, H400  
NGC 2506 (OC, Mon): C54, H400  
NGC 2527 (OC, Pup): DSB, H400  
NGC 2539 (OC, Pup): DSB, H400, UC  
NGC 2571 (OC, Pup): DSB, H400  
NGC 2655 (SG, Cam): A225, H400  
NGC 2775 (SG, Cnc): C48, H400  
NGC 2782 (SG, Lyn): A215, H400  
NGC 3115, Spindle Galaxy (EG, Sex): C53, H400  
NGC 3193 (EG, Leo): A316, H400  
NGC 3201 (OC, Mon): DSB, H400  
NGCs 3226/3227 (EG/SG, Leo): A94, H400  
NGC 3242, the Ghost of Jupiter (PN, Hya): C59, H400, PN, UC  
NGC 3310 (SG, UMa): A217, H400  
NGCs 3395/3396 (SG/IG, LMi): A270, H400

NGC 3414 (SG, LMi): A162, H400  
NGC 3432 (SG, LMi): A206, H400  
NGC 3626 (SG, Leo): C40, H400  
NGC 3628 (SG, Leo): A16, H400  
NGC 3631 (SG, UMa): A27, H400  
NGC 4027 (SG, Cru): A22, H400  
NGCs 4038/4039, the Antennae or Ring-Tailed Galaxy (SG/SG, Crv): C60/61,  
H400, H2  
NGC 4088 (SG, UMa): A18, H400  
NGC 4236 (SG, Dra): C3, H2  
NGC 4244 (SG, CVn): C26, H400  
NGCs 4435/4438 (SG/SG, Vir): A120, H400  
NGC 4449 (IG, CVn): C21, H400  
NGCs 4485/4490 (IG/SG, CVn): A269, H400  
NGC 4559 (SG, Com): C36, H400  
NGC 4565 (SG, Com): C38, H400  
NGC 4618 (SG, CVn): A23, H400  
NGCs 4627/4631 (EG/SG, CVn): A281, C32, H400  
NGC 4697 (EG, Vir): C52, H400  
NGC 5005 (SG, CVn): C29, H400  
NGC 5128, Centaurus A (EG, Cen): A153, C77  
NGC 5195/M51 (EG/SG, CVn): A85, US  
NGC 5248 (SG, Boo): C45, H400  
NGCs 5560/5566/5569 (SG/SG/SG/, Vir): A286, H400  
NGC 5694 (GC, Hya): C66, GC, H400  
NGC 6217 (SG, UMi): A185, H400  
NGC 6302 (PN, Sco): C69, PN  
NGC 6520 (OC, Sgr): DSB, H400, OC, UC  
NGC 6543, Cat's Eye Nebula (PN, Dra): C6, H400, PN  
NGC 6633 (OC, Oph): DSB, H400, UC  
NGC 6823 (OC, Vul): DSB, H400, OC  
NGC 6826, the Blinking Planetary (PN, CYG): C15, DSB, H400, PN, UC  
NGC 6885 (OC, Vul): C37, H400, OC  
NGC 6888, Crescent Nebula (EN, Cyg): C27, H2  
NGC 6910 (OC, Cyg): DSB, H400, OC, UC  
NGC 6934 (GC, Del): C47, DSB, GC, H400, UC  
NGC 6940 (OC, Vul): DSB, H400, UC  
NGC 6946 (SG, Cyg): A29, C12, H400  
NGC 6960, Veil Nebula (W), (SNR, Cyg): C34, H2  
NGCs 6992/6995, Veil Nebula (E), (SNR, Cyg): C33, H2  
NGC 7000, North American Nebula (EN, Cyg): C20, H400  
NGC 7009, Saturn Nebula (PN, Aqr): C55, H400, PN, UC  
NGC 7023 (EN, Cep): C4, H2  
NGC 7160 (OC, Cep): DSB, H400, UC  
NGC 7209 (OC, Lac): DSB, H400, OC, UC  
NGC 7243 (OC, LAC): C16, DSB, H400, UC

NGC 7293, Helix Nebula (PN, Aqr): C63, PN, US  
NGC 7331 (SG, Peg): C30, GG&C, H400  
NGC 7448 (SG, Peg): A13, H400  
NGC 7479 (SG, Peg): C44, H400  
NGC 7606 (GC, Del): C42, H400  
NGC 7635, Bubble Nebula (EN, Cas): C11, H2  
NGC 7662, the Blue Snowball (PN, And): C22, H400, PN, UC  
NGC 7727 (SG, Aqr): A222, H400  
NGC 7789 (OC, Cas): DSB, H400, UC  
NGC 7814 (SG, Peg): C43, H2  
Melotte 25, the Hyades (OC, Tau): C41, DSB, UC

To recap: 37 Arp Peculiar Galaxies appear on more than one observing list, as do 102 of the Binocular Messiers, 58 Caldwells, 37 Deep Sky Binocular, 14 Double Stars, 9 Galaxy Groups & Clusters, 32 Globular Clusters, 100 Herschel 400s, 10 Herschel 2s, 8 Lunars, 102 Messiers, 19 Open Clusters, 4 Planetary Nebulae, 66 Urban Clubs and 22 Universe Samplers.

The Double Cluster (NGCs 869/884) and NGCs 2232, 2244 and 6826 are listed in the most observing clubs – five — and eleven other non-Messier objects appear on four lists: NGCs 457, 663, 752, 2232, 2244, 4038/4039, 6826, 6934 and 7423. Eight Messiers – M4-5, M7, M11, M22, M27, M44 and M48 – appear on five lists, and fifteen others – M2-3, M9-10, M12-13, M15, M30, M38, M47, M57, M62, M67, M92 and M107 – appear on four lists.

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