

Advanced List (L3 on pin – meaning Level 3)

This year OSP is transitioning to new contributors for the Advanced List. To honor some of the best of the past, we are revisiting some of the most interesting items from lists as far back as 2006. Items range from daytime Venus, to dim galaxy clusters, to galaxy internal features, to globulars orbiting M31. The selection goals were that the object be significantly challenging (perhaps not quite as extreme as some), and also interesting and rewarding to find and see.

As this an advanced list, prior preparation and research is highly recommended for success. A separate “guidance” document is provided on the website with pages from prior lists that had object guidance (typically from Howard Banich). Note that the required criteria for this year is noted in the list table, not the guidance pages (they may be different). Other guidance be added for some of the earlier items that did not have this, as well as a finder chart for Pluto. We’ll have a few copies of this on-site as well.

Jnow coordinates have been added this year to support pointing with digital (or analog) setting circles. J2000 coordinates are retained as well which reference recent star charts for more visually-oriented location methods. Also, the list is grouped by object type. Within those, the objects are ordered relative to their estimated difficulty level.

An important note – also shown in the table. Just like on the Intermediate List, the dimmer objects on the list may actually not be quite as dim as the magnitude suggests. Magnitude estimates vary from source to source, and tool to tool, depending on what portion of the spectrum was used for the calculation in the source. The tool used consistently throughout the OSP lists tends to estimate on the high (dim) side. In some cases, other sources show 1-2 magnitudes brighter (for the really dim stuff). Others agree with it. The message? If you are looking to stretch your equipment and observing skill, don’t let a “maybe too dim” number discourage you. It may actually be just in reach – especially with averted vision, shrouding, etc. Give it a try.

Though you are encouraged to try them all, to receive the OSP Advanced list observer pin you must observe and record at least 10 of the 20 listed objects/group combinations while you are here at OSP as described in detail in the list table. A detailed sketch or a detailed description of each object is required in order to validate your observations. Includes background stars/objects or detailed description as appropriate so your observations can be validated. Include equipment used, date, time and sketch orientation (N or W). If you work on Pluto, it needs to be observed multiple times, a day or so apart to confirm the observation. Two to three sketches are recommended. Then you can “blink compare” your sketches and see which dot jumps. Just like Tombaugh did.

Visual observations are encouraged, but goto and image enhancers are permitted at OSP for the Advanced List award. Consistent with the other lists, each objects page number in the popular Sky and Telescope Pocket Sky Atlas (PSA) is listed as well (or where it would be, if not actually included). Very few of these objects are shown in the PSA, but it can give good context of the area around the object which can be helpful for visual object location.

When finished, bring your record of observations to the Observing Program table next to the Information Tent to receive your pin. *Please check the information tent for updates on when the Observing Program table will be staffed, and where it is going to be for the next session. Typically it will be manned later in the afternoon.*

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2026 Oregon Star Party Advanced List

Deep views from Advanced Lists past... and a couple of older Intermediate List objects that were also serious challenges

#	Type	Object	Con	Mag	Size/Sp/Plt	PSA	RA (J2000)	Dec (J2000)	RA (Jnow)	Dec (Jnow)	Alternate Name and/or Comments	Source
Naked Eye												
Star Chart Ref Coordinates												
Pointing/Go-To Coordinates												
1	O	Hadinger's Brush (against the daytime sky)									Research this phenomenon and learn to detect linear polarization direction. Also see hints.	6
2	P	Venus in daylight 8 am - 6 pm	Leo	-4.13	18"	34	10h 41' 32.1"	09° 23' 26.0"	10h 42' 56.3"	09° 15' 04.0"	Shade from the sun, DO NOT USE TELESCOPE or Binoculars - Sun is 44 degerees away - risk of permanent eye damage from aiming errors. Crescent moon can help as a guide 7/16 and especially 7/17. Also see hints. Venus is suprisingly bright during the day, but finding small specs in the daytime is quite different than doing so at night, due to the way our eyes work. Coords for 7/17/2026 8:00:00 AM	6
Particularly Large Apparent Size and Dim Objects												
3	EN/DN	Sh2-155 (Sharpless)	Cep	7.7	50'	71	22h 56' 48.0"	62° 37' 00.0"	22h 57' 50.5"	62° 45' 33.0"	Aka Cave Nebula, must see the "cave" against the emission nebula.	13
4	GX	UMi dwarf galaxy	UMi	11.25	30'	41	15h 08' 48.7"	67° 11' 38.0"	15h 09' 09.5"	67° 05' 29.0"	very large very dim	3.11
Features within/around/near Galaxies												
Note: Some sources show magnitudes up to one magnitude or so brighter - there can be variations between catalog sources due to filters used. So, don't let seemingly "too dim" magnitudes discourage you from trying if you want a challenge - may not be quite as dim f the magnitude suggests.												
5	O	Markarian 205 and NGC4319; need BOTH	Dra	15.23	1.2'	41	12h 21' 43.7"	75° 19' 21.0"	12h 22' 54.7"	75° 10' 27.0"	cord for NGC4319; M13 205 is towards the edge	3.9
6	EN	Three or more of the 10 NGC regions within M101	UMa			42	14h 03' 12.6"	54° 20' 55.0"	14h 04' 09.8"	54° 13' 12.0"	cord & details for M101	2
7	EN	Three or more NGC, IC or stellar associations within M33	Tri			2	01h 33' 50.9"	30° 39' 35.0"	01h 35' 21.3"	30° 47' 49.0"	cord & details for M33	2
Globulars, and objects near them												
8	GC	Andromeda Galaxy Globulars: G1/Mayall II "dim" and challenge G2/Mayall III "dimmer"; need BOTH	And	14.56	36"	3	00h 32' 46.9"	39° 34' 41.0"	00h 34' 12.9"	39° 43' 33.0"	Hint: 2.5 degrees sep & 230 degrees rot from M13 ctr	1
9	GC	Palomar 6	Oph	16.48		00h	33' 33.9"	39° 31' 19.0"	00h 35' 00.0"	39° 40' 10.0"	Within 1' of G1, 111 degrees rotation, near UGC 330	12
10	GX	NGC6207 near M13 "dim" and IC4617 near M13 "dimmer"; need BOTH	Her	11.85	3.5'	57	17h 43' 42.2"	-26° 13' 21.0"	17h 45' 21.9"	-26° 14' 04.0"	Dim class XI (sparse) globular cluster.	1
Galaxies, Galaxy Groups and Interacting Galaxies												
11	GX	NGC6118	Ser	12.44	4.5'	54	16h 21' 48.6"	-02° 17' 00.0"	16h 23' 12.0"	-02° 20' 48.0"	"Blinking Galaxy".	13
12	GX	IC1296	Lyr	15.34	59"	63	18h 53' 18.8"	33° 04' 00.0"	18h 54' 18.2"	33° 05' 57.0"	Seeing both spiral arms counts as a 2nd observation	12
13	GXG	Hickson 79, Seyfert's Sextet, NGC6027 and nearby group.	Ser	14.39	2.3'	55	15h 59' 12.6"	20° 45' 47.0"	16h 00' 23.1"	20° 41' 13.0"	Aka Seyfert's Sextet, NGC6027 and nearby group.	1
14	GXG	NGC5545 & 5544	Boo	13.2	13.89	42	14h 17' 05.2"	36° 34' 30.0"	14h 18' 12.7"	36° 27' 03.0"	See at least three of the five galaxies (sixth is tidal tail).	10
15	GXG	NGC507 group, see at least three of the five nearby galaxies	Psc	12.6-15.1	2.4'	3	01h 23' 40.0"	33° 15' 21.0"	01h 25' 10.3"	33° 23' 43.0"	Colliding galaxies. Coord for NGC5545 (tilted one)	4
16	GXG	Hickson55, ARP329, UGC6514	Dra	14-17.4	each <1'	31	11h 32' 04.8"	70° 49' 00.4"	* 11h 33' 42.6"	70° 40' 04.6"	Coord for NGC507	4
Planetary Nebulae												
17	PN	NGC7048	Cyg	12.1	1'	73	21h 14' 15.6"	46° 17' 24.0"	21h 15' 12.6"	46° 24' 01.0"	"Peek-a-Boo" Nebula.	13
18	PN	Jones 1	Peg	12.1	5.2'	74	23h 35' 53.8"	30° 28' 03.0"	23h 37' 13.6"	30° 36' 55.0"	Large - but low surface brightness.	10
19	PN	Minkowski 1-64	Lyr	12.9	17"	63	18h 50' 01.7"	35° 14' 43.0"	18h 50' 59.2"	35° 16' 33.0"	"The other ring nebula" in Lyra, smaller & dimmer.	8
Demoted (Dwarf) Planet												
20	DP	Pluto	Cap	14.44	0.1"	66	20h 30' 25.9"	-23° 20' 17.0"	20h 32' 00.3"	-23° 14' 55.0"	Significant challenge for the bigger scopes. Five small/dim galaxies in a line. "The Worm".	5
							20h 30' 14.5"	-23° 21' 10.0"	20h 31' 49.0"	-23° 15' 48.0"		
							20h 30' 03.0"	-23° 22' 02.0"	20h 31' 37.5"	-23° 16' 40.0"		

Award Requirement:

See and sketch at least 10 of the 20 objects or object groups as described above. Includes background stars/objects or detailed description as appropriate so your observations can be validated. Include equipment used, date, time, sketch orientation (N or W).

Data Sources:
 Coordinates generated for 7/17/2026 1:00:00 AM
 Locations J2000.0 Jnow + mag & size/separation (except as noted)
 using Starry Night Pro Plus Ver. 8.1.0.2050 leEW
 Additional source where not available from SN8:
 Sky Safari Pro Ver. 8.0.2.0 (Android)
 Indicated by * between J2000 and Jnow coordinates
 or * in Mag or Size/Sep columns if used as source for that data

Object Types Key:

P	Planet	DP	Dwarf Planet
GX	Galaxy	SC	Star Cloud
GXG	Galaxy Group	S	Star
GC	Global Cluster	DS	Double Star
OC	Open Cluster	MS	Multiple Star
PN	Planetary Nebula	CS	Carbon Star
EN	Emission Nebula	VS	Variable Star
SN	Supernova Remnant	DiffN	Diffuse Nebula
DN	Dark Nebula	A	Asteroid
RN	Reflection Nebula	Ast	Asterism
C	Comet	Q	Quasar
N	Nova	O	Other

List Sources Key:

1	2006 - Dim & Dimmer, Matt Vartanian
2	2007 - Messier's Revenge, Matt Vartanian
3	2008 - Snow White and the Seven Dwarves, Matt Vartanian
4	2009 - Satan's Sampler, Matt Vartanian
5	2011 - Matt Vartanian, Howard Banich contribution to list
6	2012 - (Naked Eye Observing) - Matt Vartanian
7	2014 - Howard Banich?
8	2015 - Howard Banich
9	2016 - Howard Banich
10	2017 - Howard Banich
11	2018 - Howard Banich
12	2019 - Howard Banich
13	2008-17 most challenging intermediate list objects