

Hidden Treasures

ID	Name	Type	Const	RA	Dec	Mag	Size ′	Set Time	Date/Time Observed
NGC 5866	Fool's Gold Galaxy	Galaxy	Dra	15:06:30	+55:45:47	10	5.2	01h 51m	
NGC 6210	Turtle Nebula	P Neb	Her	16:44:30	+23:47:59	9	0.2	00h 26m	
NGC 6503	Lost in Space Galaxy	Galaxy	Dra	17:49:27	+70:08:40	10.2	6.2	Circum	
NGC 6544	Starfish Cluster	Globular	Sgr	18:07:20	-24:59:53	8.3	8.9	23h 46m	
NGC 6572	Emerald Eye Planetary	P Neb	Oph	18:12:06	+06:51:13	9	0.1	01h 10m	
NGC 6624	NGC 6624	Globular	Sgr	18:23:41	-30:21:40	8.3	5.9	23h 46m	
NGC 6633	Tweedledum Cluster	Open	Oph	18:27:15	+06:30:30	4.6	27	01h 24m	
IC 4756	Tweedledee Cluster	Open	Ser	18:38:54	+05:27:00	5	52	01h 33m	
NGC 6712	NGC 6712	Globular	Sct	18:53:04	-08:42:19	8.2	7.2	01h 14m	
NGC 6819	Fox Head Cluster	Open	Cyg	19:41:18	+40:11:12	7.3	5	04h 22m	
NGC 6818	Little Gem Nebula	P Neb	Sgr	19:43:58	-14:09:10	10	0.3	01h 52m	
NGC 6866	Frigate Bird Cluster	Open	Cyg	20:03:55	+44:09:30	7.6	7	05h 05m	
NGC 6940	Mothra Cluster	Open	Vul	20:34:26	+28:17:00	6.3	31	04h 30m	
NGC 7008	Coat Button Nebula	P Neb	Cyg	21:00:33	+54:32:35	13	1.4	07h 28m	
NGC 7027	Pink Pillow Nebula	P Neb	Cyg	21:07:02	+42:14:10	10	0.3	05h 58m	
NGC 7380	Harry Potter & Snitch	Open	Cep	22:47:21	+58:07:54	7.2	25	10h 22m	
NGC 225	Sailboat Cluster	Open	Cas	0:43:39	+61:46:30	7	12	Circum	
NGC 404	Lost Pearl Galaxy	Galaxy	And	1:09:27	+35:43:05	10.1	4.4	09h 31m	
NGC 659	Ying-Yang Cluster	Open	Cas	1:44:24	+60:40:24	7.9	5	Circum	
Mel 20	Alpha Persei Moving Clstr	Open	Per	3:22:00	+49:00:00	1.2	185	12h 55m	
NGC 1501	Oyster Nebula	P Neb	Cam	4:06:59	+60:55:14	13	0.9	Circum	
NGC 1502	Jolly Roger Cluster	Open	Cam	4:07:50	+62:19:54	5.7	8	Circum	
NGC 1528	m&m Double Cluster	Open	Per	4:15:23	+51:12:54	6.4	24	14h 07m	
NGC 2655	NGC 2655	Galaxy	Cam	8:55:38	+78:13:24	10.1	5.1	Circum	

This observing list is a select subset of Stephen O'Meara's *Hidden Treasures* list. To complete the list, observe 20 of the 24 objects. All observations must be made at the 2008 Central Texas Star Party. Use of GoTo or DSC technology is allowed but bonus points will be awarded for completing the list without them. Turn your sheet into Bill Tschumy or Jim Chandler either during or after CTSP to receive credit.

Compiled by Bill Tschumy.

Hidden Treasures Observing Notes

NGC 5866	Often considered the missing Messier 102 object, this lenticular galaxy lies 50 million light-years from us. Seen almost edge-on, it is about 90,000 light-years in diameter with a bright ring and dust lane.
NGC 6210	This planetary nebula was found by William Struve in 1825 while searching for double stars. O'Meara describes it as the "best-kept secret in Hercules". It lies approximately 3,600 light-years away from us just above the thin disk of our galaxy. It appears almost stellar at low powers but at high powers becomes a complex mix of knots, rings and other shapes.
NGC 6503	This nearly edge-on galaxy is part of the Coma-Sculptor group and lies approximately 17 million light-years away. The dwarf galaxy is about 30,000 light years across and contains a bright central nucleus within its core. This galaxy was discovered using a 2.4" refractor, so it should be possible to see in almost any scope.
NCG 6544	Lying less than 1° southeast of M8, the Lagoon Nebula, this diminutive globular cluster is often overlooked. It is 8,800 light-years away and is relatively small at only 12 light-years in diameter. The cluster contains a highly condensed core surrounded by a diffuse halo of stars.
NGC 6572	This is a compact planetary of very high surface brightness. It lies 4,800 light years away and is estimated to be 2,600 years old. At lower powers, it appears you can see the central star. However, this is actually just a compact disk with the actual central star shining at 13.6 magnitude.
NGC 6624	This globular cluster is as bright as many Messier globulars, but is often overlooked. It is about 26,000 light-years from us and has a diameter of 66 light-years. It has a compact core and is one of the oldest globulars within our galaxy.
NGC 6633	Once described as "a lovely, great, straggling thing...of an absurd shape", this nice open cluster lies 1000 light-years away and spans 5.8 light-years in size. It is believed to be about 600 years of age. Look for it in binoculars and you will also see its companion (Tweedledee) about 3° to the southeast.
IC 4756	Sometime called the "Summer Beehive", this superb binocular (and telescopic) cluster contains about 500 stellar members. Both it and its companion Tweedledum to the northwest can be viewed with the naked eye. It is seen against the background of the Milky Way which may be one reason it is not as well known as it should be.
NGC 6712	O'Meara describes this as "one of the most underrated globular clusters in the heavens". It lies 22,500 light-years away and is relatively small and sparse, spanning only 66 light-years and containing about 1 million stars. Its orbit takes it within 1000 light-years of the galactic center and each time it does so it loses its fainter lower mass stars. Currently the cluster contains no stars less massive than our Sun, making it quite unique.
NGC 6819	This cluster is moderately old and rich. It is believed to be about 2.5 billion years old and to contain about 930 members, most of which are less than 11th magnitude. At lower power it can be mistaken for a globular cluster but higher powers will reveal its true nature. The cluster lies 6,700 light-years away and spans about 10 light-years in extent.
NGC 6818	This is the object featured on the "Hidden Treasures" observing pin. It is a planetary nebula approximately 5,500 light-years away and it is believed to be around 3,500 years young. It is relatively small and needs powers over 100x to begin to show structure.
NCG 6866	O'Meara describes this as a "marvelously obscure, but visually enticing cluster". It contains some 130 stars of 10th magnitude or fainter. The true size is 18 light-years across and it lies 4,200 light-years away.
NGC 6940	Hey, another open cluster! This one is moderately rich with 170 members, the brightest of which shines at 11th magnitude. The cluster is believed to be about 1 billion years old and lies 2,600 light-years away. Because it is situated against a rich Milky Way background, the cluster takes time to observe and appreciate. O'Meara says it reminds him of Mothera, the classic 1960s Japanese science-fiction creature.
NGC 7008	An interesting planetary nebula, NGC 7008 lies 2,700 light-years away and spans about 1 light-year in true physical extent. The nebula shows much inhomogeneity and was originally classified as an ordinary diffuse nebula. The nebula appears to "kiss" two 10th and 9th magnitude stars. At 100x and above it takes on a very mottled appearance with an elliptical shape.

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NGC 5866	Often considered the missing Messier 102 object, this lenticular galaxy lies 50 million light-years from us. Seen almost edge-on, it is about 90,000 light-years in diameter with a bright ring and dust lane.
NGC 7027	This bright planetary nebula is quite young, being only 1000 years old. This is reflected in its being only 0.2 x 0.1 light-years in size whereas most planetaries are around 1 light-year across. It resides about 2,100 light-years away from us. The planetary has been heavily studied and its central star was found to be 200,000 °C, making it one of the hottest stars known. Because of the extreme temperature, this object is a powerful radio source.
NCG 7380	This is a young open cluster, still embedded in the nebulosity from which it arose. It is only one or two million years old, yet star formation appears to have already stopped. The cluster lies a distant 9,700 light years away in the next spiral arm outwards. There are maybe 70 stars spanning a distance of 60 light-years in space.
NGC 225	Easily resolved in a small scope, the brightest members of this open cluster shine at 9th magnitude. Although its spread-out nature makes it appear old, the cluster is actually rather young with an estimated age of 120 million years. About 30' to the northwest you can see the open cluster Stock 24. Although each cluster spans about 9 light-years, Stock 24 is three times further away at a distance of 6,000 light-years.
NGC 404	"Faint but neat" is what my observing notes say. This bright lenticular galaxy lies only 6' northwest of Beta Andromedae. At a distance of 8 million light-years, on the edge of our Local Group of galaxies, this diminutive galaxy is only 16,000 light years in diameter. At higher powers, try moving Beta Andromedae out of the field of view and you might notice the galaxy's mottled appearance referred to by O'Meara.
NCG 659	This cluster is not a visual powerhouse but people I've shown it to seem taken by it. It forms a wide, dim "double cluster" with M103 about 1° to the west. Both clusters lie about 8,000 light-years away and have true physical diameters of about 15 light-years. The cluster is around 20 million years old and contains about 180 members.
Mel 20	Get out your binoculars to view this object since it spans almost 5° of sky. As O'Meara says, at low power "countless hundreds of dim suns form all manner of geometrical patterns: loops, arc, hooks, lines, angles and other miniature asterisms". Also known as the Alpha Persei OB3 Association, this group of O- and B-type supergiants have a common proper motion in space. Located only 535 light-years away, it extends 47 light-years in diameter.
NGC 1501	This planetary is 5,000 light-years distant and measures 1.4 light-years in physical extent. This puts it about 4 1/2 times farther than the Ring Nebula, M57 and 3 1/2 times larger. From the size of its shell, it is estimated to be about 12 million years old – middle age for planetaries. The central star is a Wolf-Rayet star, a luminous, hot star that blows off its outer layers during the red giant phase. The central star is 14.5 magnitude and should be visible in larger scopes.
NGC 1502	This open cluster lies at the end of the chain of stars known as Kemble's Cascade in Camelopardalis. The chain and star cluster are not believed to be physically related. It consists of a bright core of 4 stars and expands out to about 20' in angular size. A nice double star shines in the center. The cluster is young at around 6 million years. It contains about 63 members visible in larger scopes and resides 2,600 light-years away.
NGC 1528	This open cluster contains around 165 stars spread out over 13 light-years. The assemblage lies 2,400 light-years distant with an estimated age of 370 million years.
NCG 2655	Looking more like a planetary nebula than a galaxy, NGC 2655 is part of the Ursa Major galaxy cluster and resides 80 million light-years away. It is a transitional lenticular galaxy with some spiral structure. Halton Arp has included it in his <i>Atlas of Peculiar Galaxies</i> as object 225. A probable black hole lies at its center.

Note: These notes were compiled by Bill Tschumy from descriptions in Stephen O'Meara's *Hidden Treasures* book. Many thanks to the author.