

Hands On: AstroPlanner

Website: <http://astroplanner.net/>

Cost: \$45.00

Description: AstroPlanner is a software application for Macintosh and Windows computers that facilitates astronomical observation planning, visualization and logging, as well as control of telescopes with computerized go-to mounts. Additionally you can import your own images in this application.

Requirements:

- Mac – Mac OS X 10.11 or later, 350 MB disk space
- Windows – Windows 7 SP1 or later, 350 MB disk space
- Catalogs – Up to 2GB+ disk space required if all catalogs are downloaded.

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Application Default Screen

The screenshot displays the AstroPlanner application interface. At the top, the title bar reads 'JTY_AstroPhotography_2023.apd [111 Objects, 43 Observed, 43 Highlighted, IC405 Selected]'. The menu bar includes File, Edit, Object, Observation, Image, Telescope, Script, Window, and Help. The toolbar contains icons for navigation and observation actions.

Key interface elements include:

- Telescope:** C-11, Site: Chandler Home, Date/Time: 1/16/2023, Julian: 2459960.8019.
- Sun & Twilight:** Rise: 7:31 AM, Set: 5:41 PM, Astr: 6:02 AM, Naut: 6:32 AM, Civil: 7:03 AM.
- Moon:** Next Rise: 2:02 AM (1.8 hr), Next Set: 12:55 PM (12.7 hr), Age: 23.3 d (Waning), Phase: Crescent, Illum: 37.5%, Alt/Az: -20.8/95°.
- Observation Schedule:** A graph showing observation times from Feb to Dec, with a highlighted period for 1/15/2023 and 1/16/2023.
- Object List Table:** A table listing celestial objects with columns for visibility, transit, constellation, type, name, catalog, ID, user notes, size, altitude, RA, Dec, magnitude, and observation details.
- Star Chart:** A detailed view of the constellation Auriga, highlighting the object NGC 1545 (IC 405).

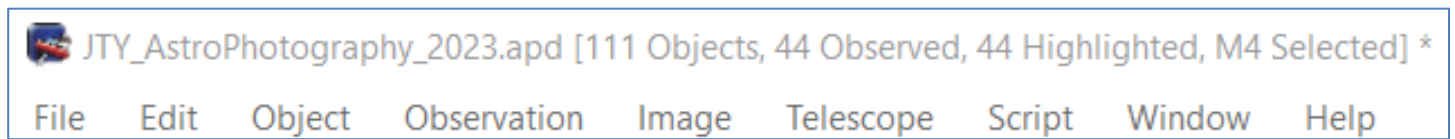
Vis	Transit	Const	Type	Name	Catalog...	ID	User Notes	Si...	Altitu...	RA	Dec	M...	Mag...	Sep	Rise	OD...	SB
Yes	12:15 AM	Gem	P Neb	Medusa Nebula	AbellPN	Abell21	A55 16.AR...	10.25	70°	07h 29m 03s	+13°14.5'				5:37 PM	n/a	n/a
Yes	3:43 PM	Cep	BrNeb	Sh2-155,Cave Nebula	Caldwell	C9		50x...	15°	22h 56m 48s	+62°37.0'				Circum	n/a	n/a
Yes	10:03 PM	Aur	Neb	Flaming Star Nebula	IC	IC405	*6.7 with p...	30	63°	05h 16m 29s	+34°21.4'				2:12 PM	n/a	n/a
Yes	10:09 PM	Aur	Open		IC	IC410	dif, many s...	40	64°	05h 22m 44s	+33°25.0'				2:23 PM	n/a	n/a
Yes	10:14 PM	Aur	Neb		IC	IC417	vL, dif, *6 inv	13	65°	05h 28m 06s	+34°25.3'				2:24 PM	n/a	n/a
Yes	10:18 PM	Aur	Open		NGC	NGC1931	vB, L, R, B**...	3	66°	05h 31m 25s	+34°14.7'	11.3			2:28 PM	37x	22.3
Yes	7:13 PM	Cas	Neb		IC	IC1795	patch of ne...	20	36°	02h 26m 32s	+62°02.4'				Circum	n/a	n/a
Yes	11:51 PM	Mon	Neb	Eagle Nebula	IC	IC2177	pB, eL, iR, v...	120	46°	07h 04m 25s	-10°27.2'				6:16 PM	n/a	n/a
Yes	3:15 AM	UMA	Galaxy	Coddington's Nebula	IC	IC2574	vF, vL, iF	12.3	47°	10h 28m 22s	+68°24.8'	10.6			Circum	37x	24.7
	1:37 PM	Cyg	Neb	Pelican Nebula [2]	IC	IC5070	F, dif	80	-10°	20h 51m 00s	+44°24.1'				4:52 AM	n/a	n/a
Yes	6:17 PM	Cas	BrNeb	Firefox Nebula	LBN	LBN633	Sim 22.Sh ...	10x3	28°	01h 30m 40s	+58°22.0'				Circum	n/a	n/a
Yes	6:02 PM	Cas	Open		NGC	NGC436	Cl, S, iF, pC	6	26°	01h 15m 58s	+58°48.7'	8.8			Circum	38x	21.3
Yes	6:06 PM	Cas	Open	Dragonfly Cluster,ET Cluster...	NGC	NGC457	Cl, B, L, pRi...	13	27°	01h 19m 35s	+58°17.2'	6.4			Circum	38x	20.6
	12:11 PM	Vul	DkNeb		LDN	LDN772	Opacity:4	2	-34°	19h 25m 07s	+23°06.0'				5:03 AM	n/a	n/a
Yes	10:21 PM	Tau	SNR	Crab Nebula, Taurus A, NGC...	Messier	M1		6x4	62°	05h 34m 32s	+22°00.8'	8.4			3:16 PM	38x	20.5
	2:20 PM	Aqr	Globular	NGC7089	Messier	M2		12.9	-46°	21h 33m 27s	-00°49.3'	7.5			8:19 AM	38x	21.7
Yes	6:28 AM	CvN	Globular	NGC5272	Messier	M3		16.2	13°	13h 42m 11s	+28°22.5'	7.0			11:02 PM	38x	21.7
	9:10 AM	Sco	Globular	Cat's Eye, NGC6121	Messier	M4		26.3	-50°	16h 23m 35s	-26°31.5'	7.5			4:23 AM	37x	23.2
	8:05 AM	Ser	Globular	NGC5904	Messier	M5		17.4	-21°	15h 18m 33s	+02°04.9'	7.0			1:57 AM	38x	21.8
	10:05 AM	Oph	Globular	NGC6333	Messier	M9		9.3	-57°	17h 19m 12s	-18°31.0'	9.0			4:53 AM	37x	22.5
	9:43 AM	Oph	Globular	NGC6254	Messier	M10		15.1	-44°	16h 57m 09s	-04°05.9'	7.5			3:51 AM	38x	22.0
	9:34 AM	Oph	Globular	Gumball Globular, NGC6218	Messier	M12		14.5	-41°	16h 47m 14s	-01°56.8'	8.0			3:36 AM	37x	22.4
	9:28 AM	Her	Globular	Hercules Globular Cluster, Gr...	Messier	M13		16.6	-10°	16h 41m 41s	+36°27.5'	7.0			1:28 AM	38x	21.7
	10:24 AM	Oph	Globular	NGC6402	Messier	M14		11.7	-50°	17h 37m 36s	-03°14.7'	9.5			4:30 AM	37x	23.5
	2:16 PM	Peg	Globular	Great Pegasus Cluster, NGC7...	Messier	M15		12.3	-36°	21h 29m 58s	+12°10.0'	7.5			7:41 AM	38x	21.6
	9:49 AM	Oph	Globular	NGC6273	Messier	M19		13.5	-58°	17h 02m 38s	-26°16.0'	8.5			5:01 AM	37x	22.8

At the bottom, there is a 'Highlighting:' section set to 'Observed' and a toolbar with buttons for 'Quick Obs', 'New Observation', 'Lookup', 'Show Catalogue', 'Search Catalogue/s', 'Sort List...', 'Add Special', 'Delete', and 'Slew To'.

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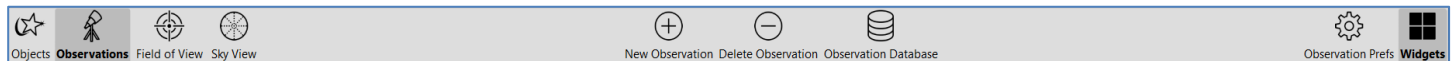
Main Sections of the Application

File Name and Menu Bar



More information in some menu selections later in the demo.

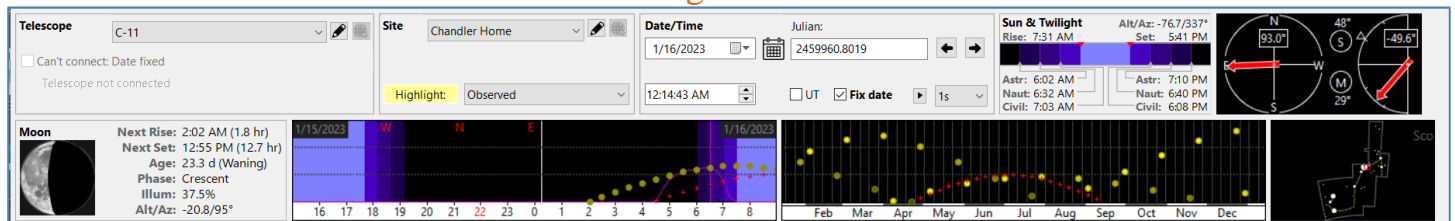
Task Selections Bar



Access primary functions and features by selecting the appropriate icons appearing in this bar.

- **Objects** – List of objects in the active document.
- **Observations** – Document observations made on an object.
- **Field of View** – View what an object will look like for your configuration.
- **Sky View** – All-Sky Charts

Widgets Bar



Row 1 Sections

- **Telescope** – Telescope selection and control
- **Site** – Observation site
- **Date/Time** – Current or fixed Date and Time
- **Sun & Twilight** – Sun rise/set information
- **Alt/Az coordinates** – Alt/Az coordinates of selected object

Row 2 Sections

- **Moon** – Graphic representation of moon with moon information
- **Night Chart** – Short term visibility indicator
- **Year Chart** – Long term visibility chart
- **Constellation Chart** – Location of selected object in constellation

Hands On: AstroPlanner

Objects Table

Vis	Transit	Const	Type	Name	Catalog...	ID	User Notes	Si...	Altitu...	RA	Dec	M...	Mag...	Sep	Rise	OD...	SB
Yes	12:15 AM	Gem	P Neb	Medusa Nebula	AbellPN	Abell21	A55 16,AR...	10.25	70°	07h 29m 03s	+13°14.5'				5:37 PM	n/a	n/a
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Yes	10:03 PM	Aur	Neb	Flaming Star Nebula	IC	IC405	*6.7 with p...	30	63°	05h 16m 29s	+34°21.4'				2:12 PM	n/a	n/a
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Yes	10:14 PM	Aur	Neb		IC	IC417	vL dif, *6 inv	13	65°	05h 28m 06s	+34°25.3'				2:24 PM	n/a	n/a
Yes	10:18 PM	Aur	Open		NGC	NGC1931	vB, L, R, B**...	3	66°	05h 31m 25s	+34°14.7'	11.3			2:28 PM	37x	22.3
Yes	7:13 PM	Cas	Neb		IC	IC1795	patch of ne...	20	36°	02h 26m 32s	+62°02.4'				Circum	n/a	n/a
Yes	11:51 PM	Mon	Neb	Eagle Nebula	IC	IC2177	pB, eL, iR, v...	120	46°	07h 04m 25s	-10°27.2'				6:16 PM	n/a	n/a
Yes	3:15 AM	Uma	Galaxy	Coddington's Nebula	IC	IC2574	vF, vL, iF	12.3	47°	10h 28m 22s	+68°24.8'	10.6			Circum	37x	24.7
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Yes	6:28 AM	Cvn	Globular	NGC5272	Messier	M3		16.2	13°	13h 42m 11s	+28°22.5'	7.0			11:02 PM	38x	21.7
	9:10 AM	Sco	Globular	Cat's Eye, NGC6121	Messier	M4		26.3	-50°	16h 23m 35s	-26°31.5'	7.5			4:23 AM	37x	23.2
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	9:43 AM	Oph	Globular	NGC6254	Messier	M10		15.1	-44°	16h 57m 09s	-04°05.9'	7.5			3:51 AM	38x	22.0
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	9:28 AM	Hcr	Globular	Hercules Globular Cluster, Gr...	Messier	M13		16.6	-10°	16h 41m 41s	+36°27.5'	7.0			1:28 AM	38x	21.7
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	9:49 AM	Oph	Globular	NGC6273	Messier	M19		13.5	-58°	17h 02m 38s	-26°16.0'	8.5			5:01 AM	37x	22.8



14.5' x 10.3' Globular Cluster M-4

- **Objects Table** – Configurable table containing information on selected objects. Multiple columns are available that can be ordered to your preference.
- **Image Frame** – Contains image of object downloadable from catalogs, or user images and chart images.

Object Actions Bar

Highlighting: Observed

+ - 🔍 ✍️ ⚙️
Quick Obs New Observation Lookup ▶ Show Catalogue ▶ Search Catalogue/s ▶ Sort List... Add Special ▶ Delete ▶ Slew To ▶

- **Add** - Add custom objects to list
- **Remove** – Remove selected objects from list
- **Duplicate** – Duplicate objects in list
- **Find** – Search for object in list
- **Edit** – Edit selected object in list
- **List Preferences** – Set list preferences
- **Quick Obs** – Add observation for selected object
- **New Observation** – Add observation for selected object
- **Lookup** – Locate object by ID or Name in any one of multiple catalogs
- **Show Catalogue** – Display objects in any one of many catalogs
- **Search Catalogue/s** – Perform search on any one or multiple catalogs based on provided criteria
- **Sort List** – Set sorting order of list based on selected column(s)
- **Add Special** – Add Planets, sun, comet, etc. to list
- **Delete** – Delete objects from list based on selected criteria

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Observations Screen

Object:

Vis	Transit	Const	Type	Na
	5:26 AM	Hya	Globular	NG
Yes	5:28 AM	Vir	Galaxy	NG
Yes	5:30 AM	Vir	Galaxy	NG
Yes	5:38 AM	Com	Galaxy	NG
Yes	5:59 AM	Com	Globular	NG
Yes	6:03 AM	Com	Globular	NG
Yes	6:28 AM	CVn	Globular	NG
	8:05 AM	Ser	Globular	NG
	8:51 AM	Her	P Neb	
	9:03 AM	Sco	Globular	NG
	9:10 AM	Sco	Globular	Cat

Observing Session Data (Observations logged in this session: 2)

Start: 1/2/2021 at 12:00 AM
End: 1/2/2021 at 12:15 AM
Observer: James
Site: Chandler Home
Seeing:
Transparency:
Name: 1/2/2021 at 12:00 AM

General Attachments (0)

Resource combinations:

Found	Telescope	Eyepiece	Imager	Optical Aid	Mag	FoV	Filter	Rating
<input checked="" type="checkbox"/>	C-11	None	ZWO 6200MC Pro	None	n/a	44.4'	None	None

Observations (1 logged):

Date/Time	Site/Equipment
1/2/2021 12:00:01 AM	Chandler Home C-11, None, ZWO 6200...

Magnification limits: 37X - 443X
Dawes' limit: 0.4"
Visual mag. limit: 14.9
Focal length: 2790 mm
Magnification: n/a
Field of view: 44.4x29.6'
Dixel Size: 0.28"

Screen is used to document objects that you have observed. Information including Observation site, conditions, date, time, hardware configuration are recorded here.

Field of View Screen

Moon: Next Rise: 2:02 AM (1.8 hr), Next Set: 12:55 PM (12.7 hr), Age: 23.3 d (Waning), Phase: Crescent, Illum: 37.5%, Alt/Az: -20.8/95°

Latitude	Local Date	Julian Date	Computer Date
33°19'25" N	1/16/2023	2,459,960.80189	1/16/2023
Longitude	Local Time	Local Sidereal	Computer Time
111°51'59" W	00:14:43	07:29:09	00:14:43
GMT Offset	GMT	GMST	Local - Computer
-7 hr	07:14:43	14:56:37	0 hr

ID: M107 Names: NGC6171 FoV: 1° RA/Dec: 16h 32m 32s / -13°03'11" Alt/Az: 45.1° / 73.9° Charts: 56 Imager FoV: 44.37' x 29.6' Imager Scale: 0.28 arcsec/px

Date/Time Fixed at: 1/16/2023 12:14:43 AM

Field Diameter: Fixed (1") Telescope: C-11
Eyepiece/Imager: ZWO 6200MC Pro Optical Aid:
Spiral Scan... Images Get Scope Auto

Magnitude Limits Stars: 15 DSOs: 15
Star labels: 5 DSO labels: 15
FoV Rotation: 0° Reticle Rotation: 0°

Display Options
 Constellations
 Borders
 Colour constellation stars
 Figures
 Names
 Display
 Aperture
 Cardinal points
 Constellation sub-chart
 Cross hairs
 Current telescope position
 Don't show objects outside aperture
 Highlighted plan objects only
 Images
 Multiple stars

Show image size as it may appear in the configuration you have specified for your hardware. If you have added camera specifications, you can see how it may appear when capturing an image.

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Sky View Screen

The screenshot displays the AstroPlanner Sky View Screen. At the top left, there is a 'Moon' panel with a small image of the moon and the following data:

- Next Rise: 2:02 AM (1.8 hr)
- Next Set: 12:55 PM (12.7 hr)
- Age: 23.3 d (Waning)
- Phase: Crescent
- Illum: 37.5%
- Alt/Az: -20.8/95°

To the right of the Moon panel is a table of location and time data:

Latitude	Local Date	Julian Date	Computer Date
33°19'25" N	1/16/2023	2,459,960.80189	1/16/2023
Longitude	Local Time	Local Sidereal	Computer Time
111°51'59" W	00:14:43	07:29:09	00:14:43
GMT Offset	GMT	GMST	Local - Computer
-7 hr	07:14:43	14:56:37	0 hr

Below the table, the local time and date are shown: Local: 12:14 AM, LST: 7:29 AM, GMT: 7:14 AM, GMST: 2:56 PM, JD: 2459960.8019.

The main area of the screen is a circular star chart showing constellations, stars, and planets. The planets Mars and Uranus are highlighted in red and blue respectively. The chart is overlaid with a grid of lines representing celestial coordinates.

On the right side of the screen is a 'Display Options' panel with the following settings:

- Constellations: Constellations, Borders, Figures, Names
- Lines: Lines, Air Mass (2), Alt-Azimuth grid, Ecliptic, Equatorial grid, Fixed Altitude (Angle:30°), Galactic equator, Meridian, Milky Way outline, Telescope RA/Dec
- Objects: Objects, Alignment stars (All), Anti-Solar Point, Bolide shower radiants, Catalogue objects (No Limit), Field of view (FoV), Meteor shower radiants, Stars (Mag ≤5), Sun/Moon/Planets
- Orientation: Orientation, Flip East/West, Flip North/South, Rotate Chart (Angle:90°)
- Plan Objects: Plan Objects
- Time offset: +24 hr
- Show alignment star information:

Display various location/time values along with Star Chart representing night sky for Date/Time and location selected in application.

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Resources

Resources

File Edit Window Help

Sites Telescopes Eyepieces Optical Aids Filters Observers Imagers Combinations

Sites

- Chandler Home
- Picket Post Mountain
- Queen Valley
- Snow Canyon
- Zion Ponderosa

Resource Name: URL: Default

Latitude: Latitude and longitude can be entered as decimal degrees (e.g. 122.5), as dd:mm:ss (e.g. 122:30:00), or in the format as displayed in the entry fields. Or click on the map.

Longitude: During Standard Time. +ve hours east of 0° longitude, -ve hours west of 0° longitude.

Offset from GMT: hours

Daylight Saving rules:

Clock offset: hr from: Clock offset from Site:

Site Altitude: m

Bortle Dark Sky Rating: Sky brightness: mag/sq.arcsec Naked-eye Zenith Limit: 3.9

User-defined Fields Comments Site-owned Resources

File...	Value

Horizon (click to change):

GMT GMT Offset

Accessed via Menu | **Edit** | **Resources** | this pop-up is where information associated with your location and equipment is specified. The more information you supply here the more effective the application can be.

- **Sites** – Add your observing sites
- **Telescopes** – Provide information on the telescopes you will be using
- **Eyepieces** – Provide specifications for eyepieces you own.
- **Optical Aids** – Items that may be added to the optical train such as focal reducers, barlow lens, etc.
- **Filters** – Provide information on filters you may use for imaging or observation.
- **Observers** – Provide demographics for observers that may be using the application.
- **Imagers** – Identify and provide specifications for any cameras you may be using for imaging.
- **Combinations** – Based on information provided in previous tabs this tab will provide information on various hardware combinations including Field of View, Magnification, Imaging Pixel Scale, etc.

Real World Scenarios

Case 1, Observation Session: I am planning to visit some family at a location that has fairly dark skies. I will be taking my 6" NexStar 6se (Schmidt-Cassegrain) with me. I would like a list of good targets to show my family.

Case 2, Deep Sky Imaging Session: The moon can present a real problem when it is near full for deep sky objects. By imaging small Planetary Nebula, the moon plays less of a factor since Planetary tend to be highly concentrated and have a high surface brightness (SB). Utilizing a tri-narrow band filter, I have found I can image planetariums as close to 1 day from the full moon and get great results. Using AstroPlanner we can identify targets and help form an imaging plan.

Since we are looking at a small portion of the sky we might be able to use a planetary camera instead of our regular Full Frame Camera ([ZWO 6200MC Pro](#), FOV=44' x 30'), or we can use the regular camera and crop the final image.

Planetary Nebula Imaged one day before and after Full Moon



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Case 1: Observation Planning

Location: Snow Canyon, Utah

Date: Friday, June 16th

Time: 8pm – 11pm

Telescope: Celestron NexStar 6se

Eyepieces: Orion 40mm Plossl, TeleVue Zoom 8mm-24mm

Workflow

- Add Planets & Moon [**Add Special**] button
 - Eliminate items not well positioned (low Altitude) – Venus & Mars remaining
- Search Catalogs and Add prospects [**Search Catalogue/s**] button

Search Criteria

Search Messier Catalogue

In RA range: 00:00:00 to 23:59:24

In Dec range: -90:00:00 to +90:00:00

Within 1 * of RA: 00:00:00 Dec: +0:00:00

In Magnitude range: -5 to 10 For telescope...

In Magnitude2 range: -10 to 30 For telescope...

In Magnitude Diff. range: 0 to 30

Splittable with: C-11 from Chandler Home

In Difficulty idx range: 0 to 100

In Separation range: 0 to 10000 Has orbit data

In Size* range: 0 to 100x100

Surface Brightness: 0 to 1000 mag/arcsec

Spectral Data contains: Regex

Name contains: Regex

Description contains: Regex

Limit to Visibility: Altitude between: 0 and 90

Site: Snow Canyon Date: 6/16/2023 Today

Include site horizon Time: 8:00 PM to 11:00 PM

Transit also occurs Set plan date/time

* enter Size as either "m" (for linear arcmin) or "m x n" for square arcmin, where m,n are numbers. In the first case, the first dimension only will be considered.

Limit to Types: 5 selected

- Asterism (2)
- Diffuse Nebula (7)
- Double Star (1)
- Galaxy (4)
- Globular Cluster (29)
- Open Cluster (33)
- Planetary Nebula (4)
- Supernova Remnant (1)

Limit to Constellations: 0 selected

Display

All constellations

Those visible from: Show Canyon

Those visible from: Show Canyon

Include partially visible

Fully visible: All

Partially visible: None

Not visible: None

Load... Save... Search Cancel

Search Results

Search Results

File Edit Window Help

Objects Location Chart

Search ID	Obj Name	Type	RA	Dec	Mag	Pos. Angle	Size	Catalogue	Con	Ind	Rating	Description
M1	Crab Nebula, Taurus A, NGC1952	SNR	05h 34.9m	+22°01'	8.4		64d	Messier	Tau	EX		Max Alt: 37° at 8:00
M3	NGC3772	Globular	13h 42.2m	+28°23'	7.0		16.2	Messier	CMa	EX		Max Alt: 31° at 9:00
M4	Core 4m, NGC6121	Globular	16h 23.6m	+24°52'	7.5		26.2	Messier	Scp	EX		Max Alt: 23° at 11:00
M5	NGC5904	Globular	15h 16.6m	+12°05'	7.0		17.4	Messier	Sgr	EX		Max Alt: 24° at 11:00
M9	NGC6355	Globular	17h 19.2m	+18°31'	9.0		9.3	Messier	Oph	VG		Max Alt: 26.1° at 11:00
M10	NGC6264	Globular	16h 52.2m	+04°04'	7.5		15.1	Messier	Oph	EX		Max Alt: 13° at 11:00
M12	Gumbell Globular, NGC6218	Globular	16h 47.2m	-01°57'	8.0		14.5	Messier	Oph	EX		Max Alt: 14.4° at 11:00
M13	Hercules Globular Cluster, Great Hercules Cluster, NGC6205	Globular	16h 41.7m	+36°28'	7.0		16.6	Messier	Her	EX		Max Alt: 70.5° at 11:00
M14	NGC6465	Globular	17h 37.6m	-03°15'	8.5		13.2	Messier	Oph	VG		Max Alt: 16.4° at 11:00
M15	Great Regulus Cluster, NGC7078	Globular	21h 30.0m	+12°10'	7.5		12.3	Messier	Peg	EX		Max Alt: 27° at 11:00
M19	NGC6275	Globular	17h 52.6m	+26°16'	8.5		13.5	Messier	Oph	VG		Max Alt: 20.6° at 11:00
M22	Great Sagittarius Cluster, Colespinner Cluster, NGC6656	Globular	18h 36.4m	+23°54'	6.5		24	Messier	Sgr	EX		Max Alt: 11.4° at 11:00
M27	Dumbbell Nebula, Apple Core, Diable, Double-headed Shell Nebula, NGC6812	P.Neb	18h 56.6m	+22°43'	7.5		15.2	Messier	Vul	VG		Max Alt: 26.4° at 11:00
M28	NGC6218	Globular	16h 47.2m	-01°57'	8.0		14.5	Messier	Oph	EX		Max Alt: 14.4° at 11:00

Search complete

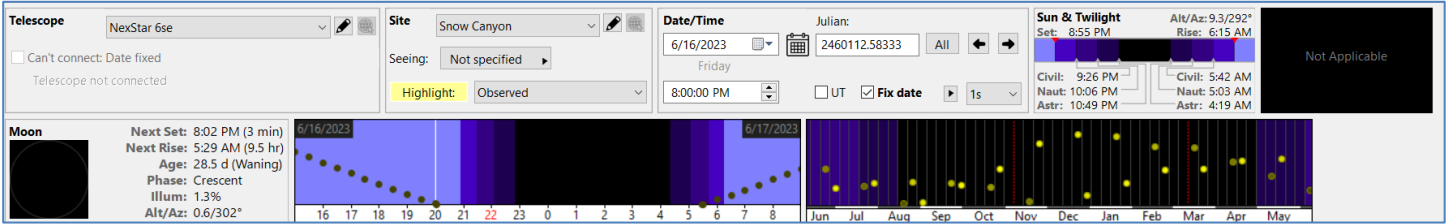
Show to Object Select from duplicates Add Sources Add All

Keep windows open Don't add if colored 43 objects

- **SAC Double Star Catalog Search Parameters** → 4 Star Systems Identified
 - **Primary Magnitude Range:** -5 to 4
 - **In Magnitude Diff Range:** 0 to 4
 - **In Separation Range:** 5 to 30
 - **Limit to Visibility**
 - **Altitude between:** 30 and 90°
 - **Site:** Snow Canyon
 - **Date:** 06/06/2024
 - **Time:** 8:00 PM – 11: PM
- **Messier List Search Parameters** → 25 objects Identified
 - **Magnitude Range:** -5 to 10
 - **In Size Range:** 5 to 100
 - **Limit to Visibility**
 - **Altitude between:** 30 and 90 °
 - **Site:** Snow Canyon
 - **Date:** 06/06/2024
 - **Time:** 8:00 PM – 11: PM
 - **Limit Types:** All but Asterism and Open Clusters

Hands On: AstroPlanner

- Specify Telescope, Site and fix Date/Time in Widget Area



- Eliminate and Refine Selection → 12 Objects Remaining
- Set Observation time to 9:30pm (Middle of observation session)
- Identify prime prospects for various types of objects based on Altitude
 - Sort List: Type, Altitude > 45°, Magnitude
 - Eliminate 2 Doubles, 1 Galaxy, 5 Globulars,
 - Sort List: Type, Surface Brightness (SB) < 22.5
 - Eliminate 10 galaxies, 1 Globular Cluster
- Sort plan by Transit Time to provide ordered list
 - Double Stars (2)
 - Galaxies (4)
 - Globular Clusters (4)
 - Planets (2)

Final Observation List

ID	Images	Name	Type	RA	Dec	Azim...	Altitu...	Rise	Transit	Set	Vis	Obs	Rating	ODM	Mag	Ma...	Sep	Diff Idx	L Rating	Size	Const	Catalog...	Chart#	Spect	SB
Venus			Planet	08h 52m ...	+19°30.1'	275°	27°	9:45 AM	4:50 PM	11:56 PM	Yes			n/a	-4.1			n/a	27.4"	Cnc		BSA: 5, ...		11.8	
Mars			Planet	09h 14m ...	+17°24.0'	270°	30°	10:14 AM	5:12 PM	12:10 AM	Yes			n/a	1.9			n/a	4.4"	Cnc		BSA: 5, ...		13.7	
M82	U	Cigar Galaxy, Ursa ...	Galaxy	09h 55m ...	+69°40.8'	336°	47°	Circum	5:54 PM	Circum	Yes	1		21x	9.2			n/a	10.5x5.1	UMa	Messier	BSA: 1, ...		22.2	
M66	U	Leo Triplet, NGC362...	Galaxy	11h 20m ...	+12°59.4'	240°	51°	12:35 PM	7:18 PM	2:02 AM	Yes			21x	9.7			n/a	9.1x4.1	Leo	Messier	BSA: 5, ...		22.3	
SACDB...	D	STF 1692,ALPHA CV...	Dbl	12h 56m ...	+38°18.0'	281°	82°	12:22 PM	8:54 PM	5:26 AM	Yes			n/a	2.9	5.4	19.4	n/a		CVn	SACDBL	BSA: 6, ...	A0	n/a	
M64	D	Black Eye Galaxy, SL...	Galaxy	12h 56m ...	+21°41.0'	211°	72°	1:41 PM	8:55 PM	4:08 AM	Yes			21x	9.3			n/a	10.3x5	Com	Messier	BSA: 6, ...		22.2	
SACDB...	D	STF 1744,ZETA UMA...	Dbl	13h 23m ...	+54°55.0'	354°	72°	Circum	9:22 PM	Circum	Yes			n/a	2.4	4.0	14.4	n/a		UMa	SACDBL	BSA: 2, ...	A2	n/a	
M51	U	Whirlpool Galaxy, Q...	Galaxy	13h 29m ...	+47°11.7'	354°	80°	11:40 AM	9:28 PM	7:16 AM	Yes			21x	8.9			n/a	10.8x6.6	CVn	Messier	BSA: 6, ...		22.2	
M3	U	NGC5272	Globular	13h 42m ...	+28°22.5'	171°	81°	2:00 PM	9:40 PM	5:21 AM	Yes	1		21x	7.0			n/a	16.2	CVn	Messier	BSA: 6, ...		21.7	
M5	U	NGC5904	Globular	15h 18m ...	+02°04.9'	140°	48°	5:07 PM	11:17 PM	5:26 AM	Yes			21x	7.0			n/a	17.4	Ser	Messier	BSA: 6, ...		21.8	
M13	U	Hercules Globular Cl...	Globular	16h 41m ...	+36°27.5'	77°	53°	4:19 PM	12:40 AM	9:01 AM	Yes			21x	7.0			n/a	16.6	Her	Messier	BSA: 7, ...		21.7	
M92	U	NGC6341	Globular	17h 17m ...	+43°08.1'	64°	48°	4:08 PM	1:15 AM	10:22 AM	Yes			21x	7.5			n/a	11.2	Her	Messier	BSA: 7, ...		21.4	

Hands On: AstroPlanner

Case 2: Planetary Nebula Imaging

Location: Chandler, Arizona

Date: Saturday, December 6th, 2 nights before full moon

Time: 7:48 pm – 4:52am (1 hour after/before Astronomical Dusk/Dawn to allow at least 1hr for imaging time)

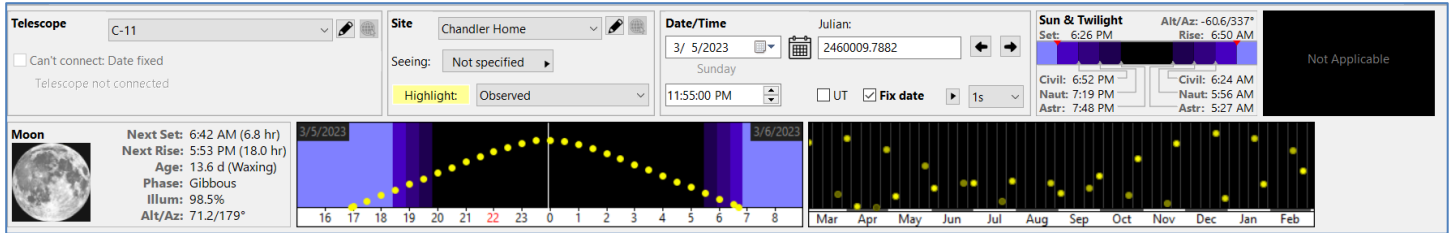
Telescope: Celestron C-11 HD (Primary Focus)

Filter: [OPT Radian Triad Ultra](#)

Camera: [ZWO 6200MC Pro](#),

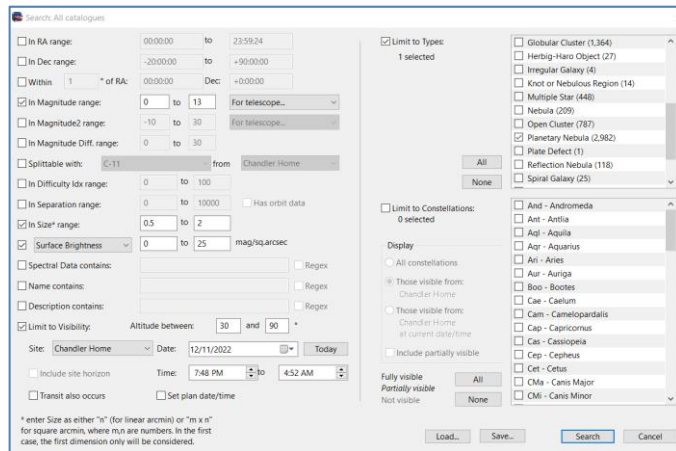
Workflow

- Specify Telescope, Site and fix Date/Time in Widget Area

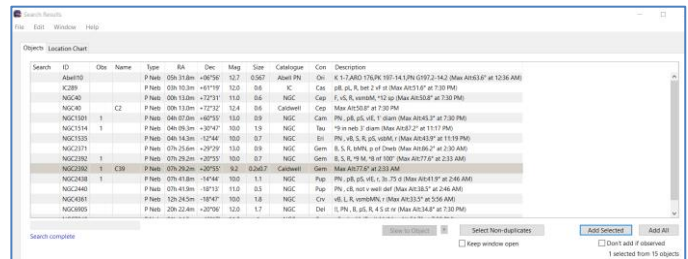


- Search Catalogs and Add prospects [[Search Catalogue/s](#)] button

Search Criteria



Search Results



- Search All Catalogs Parameters → 15 Objects Identified

- Magnitude Range: 0 to 13
- In Size Range: 0.5 to 2.0'
- Surface Brightness: 0 to 25 mag/sq.arcsec
- Limit to Visibility
 - Altitude between: 30 and 90°
 - Site: Chandler Home
 - Date: 12/06/2024
 - Time: 7:48 PM – 4:52 PM
- Limit to Types: Planetary Nebula (97)

- Inspect and eliminate duplicates → 13 objects Identified

Hands On: AstroPlanner

Final Imaging List

Untitled-1.apd [13 Objects, 4 Observed, 4 Highlighted, NGC1514 Selected] *

File Edit Object Observation Image Telescope Script Window Help

Objects Observations Field of View Sky View

New Object Delete Object/s Object Editor New Observation Observation Database Object List Prefs Widget

Telescope: C-11 Site: Chandler Home Date/Time: Julian: 2459924.7882

Seeing: Not specified Highlight: Observed

Sun & Twilight: Set: 5:18 PM, Rise: 7:23 AM, Civil: 5:47 PM, Naut: 6:18 PM, Astr: 6:48 PM, Alt/Az: -78.2/330°, Civil: 6:52 AM, Naut: 6:21 AM, Astr: 5:52 AM

Moon: Next Set: 10:27 AM (10.5 hr), Next Rise: 8:23 PM (20.5 hr), Age: 17.6 d (Waning), Phase: Gibbous, Illum: 91.3%, Alt/Az: 50.8/90°

ID	Images	Name	Type	RA	Dec	Azim...	Altitu...	Rise	Transit	Set	Vis	Obs	Rating	ODM	Mag	Ma...
NGC6905		Blue Flash Nebula	P Neb	20h 22m ...	+20°06.2'	308°	-16°	8:36 AM	3:35 PM	10:33 PM				37x	12.0	
NGC7008	D		P Neb	21h 00m ...	+54°32.5'	328°	13°	5:30 AM	4:13 PM	2:55 AM	Yes			37x	13.0	
NGC7048	D		P Neb	21h 14m ...	+46°17.2'	320°	10°	7:27 AM	4:26 PM	1:26 AM	Yes			38x	11.0	
NGC40	D		P Neb	00h 13m ...	+72°31.3'	339°	38°	Circum	7:25 PM	Circum	Yes			67x	11.0	
IC289			P Neb	03h 10m ...	+61°19.0'	338°	58°	Circum	10:22 PM	Circum	Yes			67x	12.0	
NGC1501	U D		P Neb	04h 06m ...	+60°55.2'	350°	62°	Circum	11:19 PM	Circum	Yes	1		37x	13.0	
NGC1514	U D	Crystal Ball Nebula	P Neb	04h 09m ...	+30°46.5'	255°	82°	3:46 PM	11:21 PM	6:57 AM	Yes	1		38x	10.0	
NGC1535	D		P Neb	04h 14m ...	-12°44.3'	191°	43°	5:58 PM	11:26 PM	4:55 AM	Yes			43x	10.0	
Abell10			P Neb	05h 31m ...	+06°56.1'	156°	62°	6:23 PM	12:44 AM	7:05 AM	Yes			---	12.7	
NGC2371	▲		P Neb	07h 25m ...	+29°29.2'	86°	56°	7:07 PM	2:38 AM	10:08 AM	Yes			37x	13.0	
NGC2392	▲ U D	Clown Nebula, Clow...	P Neb	07h 29m ...	+20°54.6'	99°	52°	7:40 PM	2:41 AM	9:43 AM	Yes	1		43x	10.0	
NGC2438	U		P Neb	07h 41m ...	-14°44.1'	132°	26°	9:31 PM	2:54 AM	8:17 AM	Yes	1		38x	10.0	
NGC2440	D		P Neb	07h 41m ...	-18°12.5'	134°	24°	9:41 PM	2:54 AM	8:07 AM	Yes			95x	11.0	

8.9" x 7.2" NGC-1514: Crystal Ball Nebula

Field Of View for NGC-1514 for C-11 with ZWO 6200MC Pro camera

ID: NGC1514 Name: Crystal Ball Nebula FoV: 44.36' RA/Dec: 04h 09m 17s / +30°46'33" Alt/Az: 81.5° / 255.1° Chart/s: BSA: 4, PSA: 13 Imager FoV: 44.37" x 29.6"

Date/Time Fixed at 12/10/2022 11:55:00 PM

Field Diameter: C-11, Size: 44' 21.9", Eyepiece/Imager: ZWO 6200MC Pro, Optical Aid: [None]

Magnitude Limits: Stars 15, DSOs 15, Star labels 5, DSO labels 15

FoV Rotation: 0, Reticle Rotation: 0

Display Options: Constellations (Borders, Colour constellation stars, Figures, Names), Display (Aperture, Cardinal points, Constellation sub-chart, Cross hairs, Current telescope position, Don't show objects outside aperture, Highlighted plan objects only, Images, Multiple stars)

Catalogue: Abell Galaxy Cluster, Abell Planetary Nebulae, Aitken's Double Star, Barnard Dark Nebulae, Bernes Bright Nebulosity, Bright Star, Burnham Double Star, Caldwell, Galactic Planetary Nebulae, Cederblad Diffuse Nebula, IC, Luyten Double Star, Lynds Bright Nebulae, Lynds Dark Nebulae, M31 Globular Cluster, MASH Planetary Nebula, MASH-II Planetary Nebula, Messier, NGC, PGC, SAC Double Star 4.0, SAC Double Star, SAO, Washington Double Star (2022.08), WDS Neglected Doubles 1 (2022.08), WDS Neglected Doubles 2 (2022.08), WDS Neglected Doubles 3 (2022.08), WDS Supplemental (2022.08), Zodiacal

Hands On: AstroPlanner

User Contributed Plans

Hundreds of additional user contributed plans are available to download at no cost. These are plans associated with magazine articles, books, societies, and atlases. A list of these plans is viewed by selecting | [File](#) | [User-Contributed Plans](#) | [Download](#) |

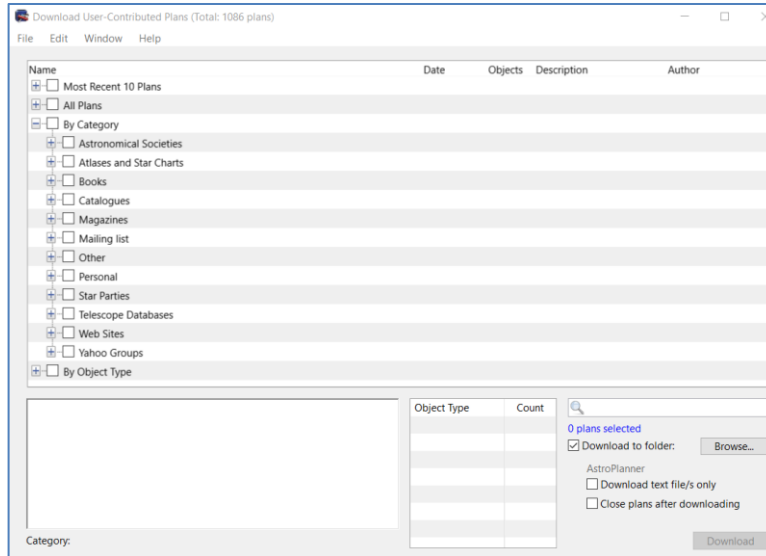
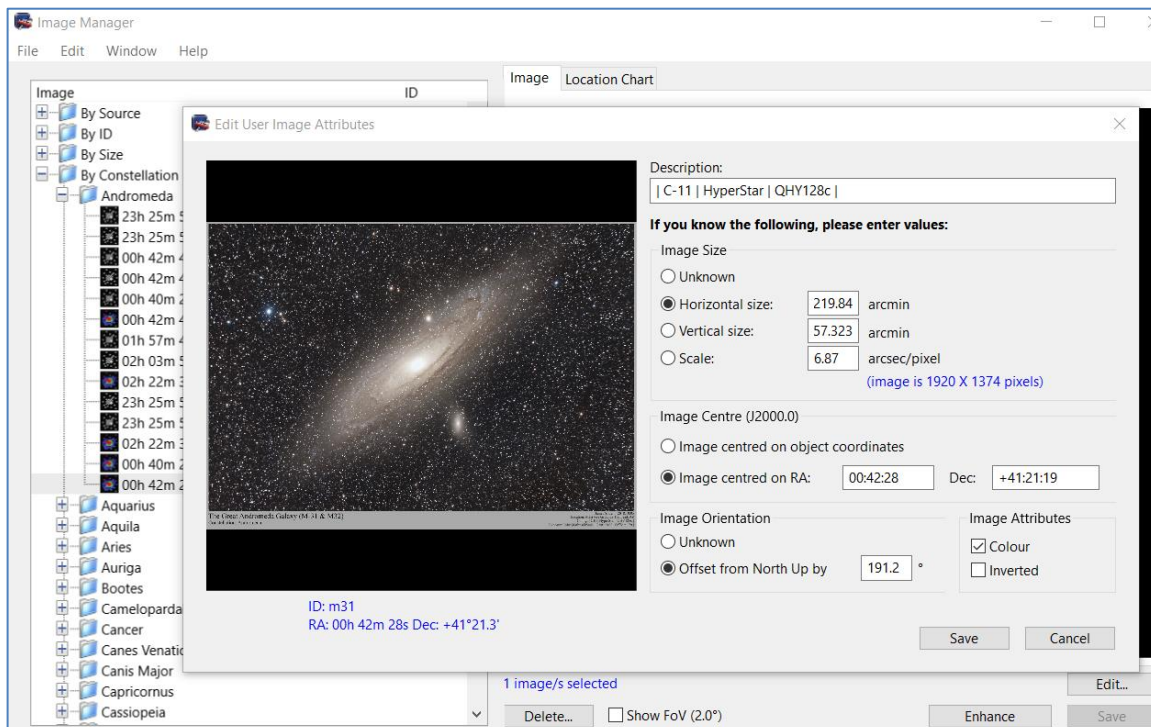


Image Manager

The image manager allows you to add your own images to the application. If you provide the required information these images can be utilized in the Field of View feature. Access the image manager by selecting | [Image](#) | [Image Manager](#) |



Hands On: AstroPlanner

Conclusion

If the user takes the time to enter the information about their hardware and demographics, the AstroPlanner application is a very powerful tool that can be used to track what objects you have viewed or imaged and help develop an observation plan in very short order customized to your hardware and preferences much better than any “Tonight’s Best” tour can. At \$45 this is a very good investment.

Contact Information

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