

Prospective Imaging Objects – December 12 2023

Astronomical Data

Sunrise	Sunset	Astronomical Dusk	Astronomical Dawn	Imaging	New Moon
07:21 am	05:21 pm	06:49 pm	05:53 am	11:04	December 12

Hardware Info

Configuration	FL	FOV	FOV°	Image Scale (1 – 1.5) ideal
C11HD ZWO ASI-6200 mono Pro	2800mm	45' x 30'	0.75° x 0.5°	0.280"/pix (Oversampled)
C11HD 0.7xReducer ZWO6200MCc	1960mm	60' x 45'	1.0° x 0.75°	0.393"/pix (Oversampled)
C11HD HS-v4 ZWO6200MCc	540mm	228' x 150'	3.8° x 2.5°	1.4"/pix (Undersampled)

How to use this document


Sculptor Galaxy (NGC 253)
Config: C11 | LF Corr |128c

Type: **Galaxy**
 Peak: **Oct 02**
 Constellation: **Sculptor**
 Coordinates:
00hr 47' 33"
-25° 17' 15"

Close Star: SAO-147420
 Catalog Objects: [NGC 253](#)

Imaging Window: *10:44 – 02:44
 Transit: 12:48

Primary Focus



01: Background Fill Color - Items that I have previously images will have a fill color of grey, Images not yet imaged will have a white background color.

02: Object Name and catalog number – Common name long with one of the reference catalog numbers associated with this object.

03: Config – The optimal configuration to image this object, and the configuration the provided image is based on based on what hardware I own. Configuration will either be the Celestron C-11 Primary focus (with focal reducer) or C-11 with HyperStar.

04: Object Image – If this is an object I have already imaged, the thumbnail is my photo. It is hyperlinked to my website, so selecting the image should open a larger image in your browser. If the object has not yet been imaged by me the image displayed is for the identified configuration as obtained from <http://www.telescopious.com>.

05: Close Star – A fairly bright star close to the target that can be used to check focus and sync the telescope before the imaging session begins.

06: Catalog Objects – List of objects that should appear in the field of view. When possible they are hyperlinked to <http://www.telescopious.com> where more information can be obtained.

07: Imaging Window – Ideally the time the object is 45° above the horizon. Southern objects with negative DEC that do not peak above 45° are indicated with a *. Imaging window for these objects may be based on 30° or even 25° above horizon for the imaging window.

08: Transit – When the object is at the highest point in the sky for the night. For equatorial mounts this is when the meridian flip will occur.

Prospective Imaging Objects – December 12 2023

Caroline's Rose (NGC-7789)

Config: |C11HD|ZWO6200MC|

Type: **Open Cluster**

Constellation: **Cassiopeia**

Coordinates:

23h 57' 37"

56° 42' 21"

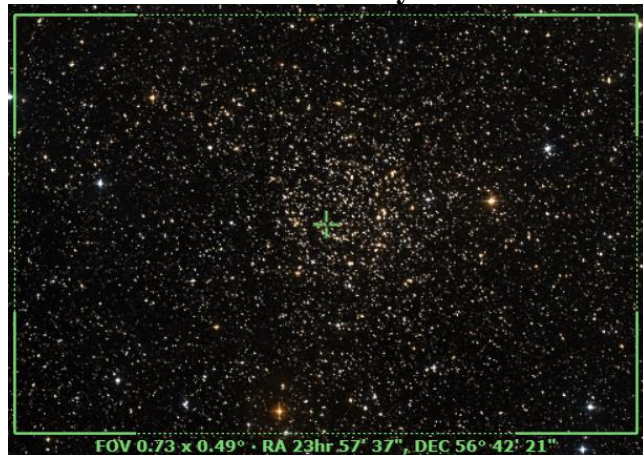
Close Star: **SAO-21607** (Shedar)

Catalog Objects: [NGC-7789](#)

Imaging Window: **06:49 – 10:49**

Transit: **07:00 | 65°**

C-11 HD: Primary Focus



NGC-7822 (Ced-214)

Config: **C11-HD | HS |**

ZWO6200MC

Type: **Emission Nebula**

Constellation: **Cepheus**

Coordinates:

Frame 01

RA: **00hr 03' 42"** DEC: **67° 41' 45"**

Frame 02

RA: **00hr 03' 42"** DEC: **65° 35' 15"**

Close Star: **SAO-10818**

Catalog Objects: Ced 214, [NGC 7822](#),

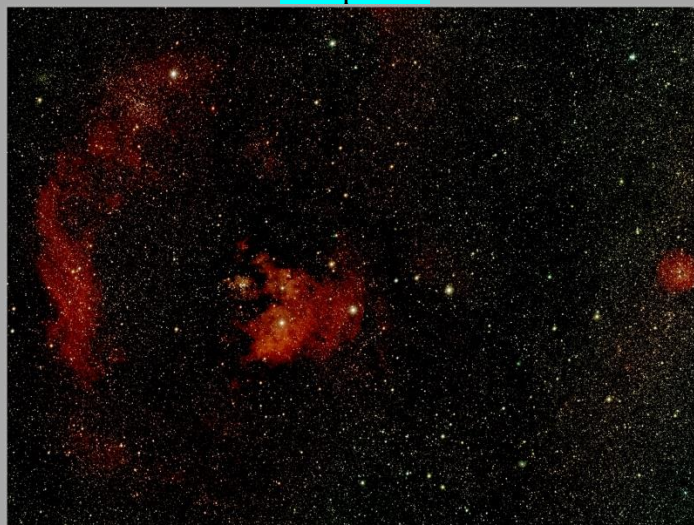
SH2-171

Imaging Window: **06:49 – 10:30**

Transit: **07:05 | 56°**

C-11 HD: HyperStar v4


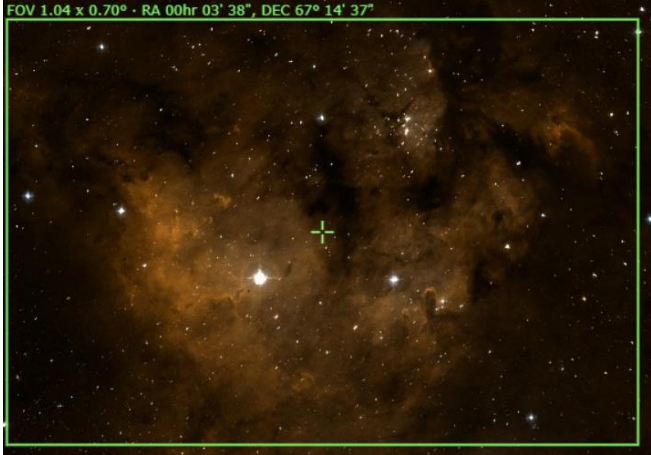

Composite!






NGC-7822 Region
Constellation: Cepheus
RA: 00h 03m 42s DEC: 67° 41' 45" (Frame 01)
RA: 00h 03m 42s DEC: 65° 35' 15" (Frame 02)

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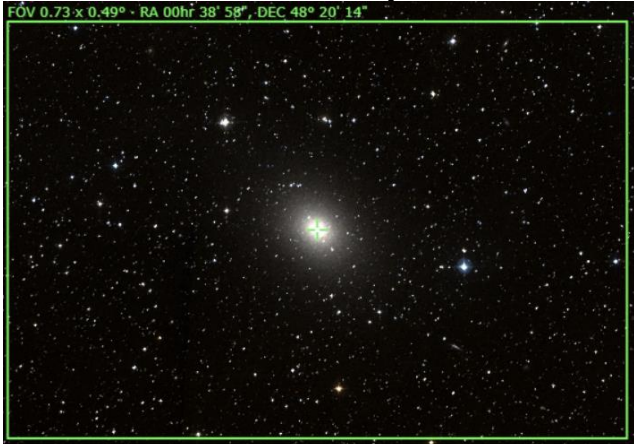
Prospective Imaging Objects – December 12 2023

<p>NGC-7822 (CED-214) Config: C11-HD HS ZWO6200MC</p> <p>Type: Diffuse Nebula</p> <p>Constellation: Cepheus Coordinates: 00h 01' 27" 67° 28' 37"</p> <p>Close Star: SAO-20268 Catalog Objects: NGC-7822/CED-214 Imaging Window: 06:49 – 10:30 Transit: 07:05 56°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">NGC-7822 Constellation: Cepheus</p> <p style="font-size: x-small; text-align: right;">Image Name: 2023-11-12 Location: Chandler, AZ Config: C-11 HD HyperStar v4 ZWO6200MC Exposure Info: 25 frames @ 10s each 130s (100% 170)</p>
<p>NGC-7822 (CED-214) Config: C11-HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula</p> <p>Constellation: Cepheus Coordinates: 00h 03' 38" 67° 14' 37"</p> <p>Close Star: SAO-20268 Catalog Objects: NGC-7822/CED-214 Imaging Window: 06:49 – 10:30 Transit: 07:05 56°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p style="font-size: x-small; text-align: center;">FOV 1.04 x 0.70° - RA 00hr 03' 38", DEC 67° 14' 37"</p>
<p>NGC-7822 (CED-214) Config: C11HD ZWO6200MC </p> <p>Type: Emission Nebula Constellation: Cepheus Coordinates: 00h 01' 56" 67° 23' 05"</p> <p>Close Star: SAO-10818 Catalog Objects: Ced 214, NGC 7822, SH2-171 Imaging Window: 06:49 – 10:30 Transit: 07:05 56°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small;">Bright Nebula NGC-7822 (Ced 214) Constellation: Cepheus</p> <p style="font-size: x-small; text-align: right;">Image Name: 2023-11-12 Location: Chandler, AZ Config: C-11 HD Astromaster 6.5 ZWO6200MC Exposure Info: 25 frames @ 10s each 130s (100% 170)</p>



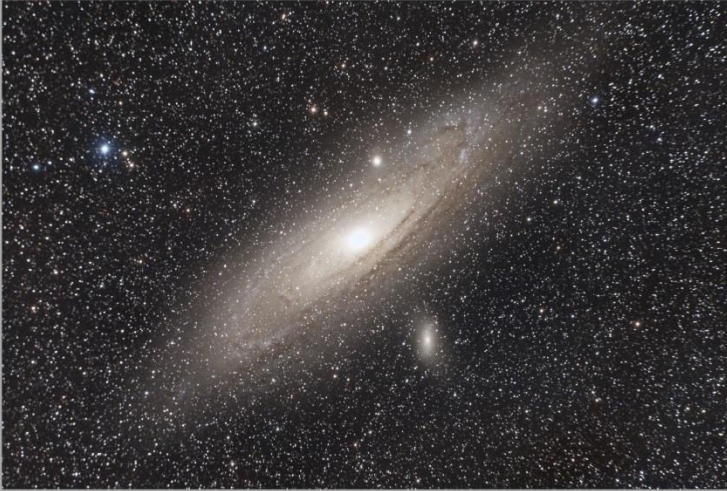
Prospective Imaging Objects – December 12 2023

<p>Bow-Tie Nebula (NGC-40) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula</p> <p>Constellation: Cepheus Coordinates: 00h 13' 01" 72° 31' 21"</p> <p>Close Star: SAO-20268 Catalog Objects: NGC-40 Imaging Window: 06:49 – 10:08 Transit: 07:16 51°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Andromeda Galaxy Group Config: C11HD ZWO6200MC </p> <p>Type: Cluster of dim galaxies Peak:</p> <p>Constellation: Andromeda Coordinates: 00h 17' 58" 30° 03' 03"</p> <p>Close Star: SAO-73765 (Alpheratz) Catalog Objects: NGC 67-72 et. El.</p> <p>Imaging Window: 06:49 – 10:54 Transit: 07:21 87°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>NGC-147 & NGC-185 Config: C11-HD HS ZWO6200MC</p> <p>Type: Galaxy Pair</p> <p>Constellation: Cassiopeia Coordinates: 00h 36' 22" 48° 26' 42"</p> <p>Close Star: SAO-21609 (Shedar) Catalog Objects: NGC-147, NGC-185 Imaging Window: 06:49 – 11:26 Transit: 07:36 75°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 



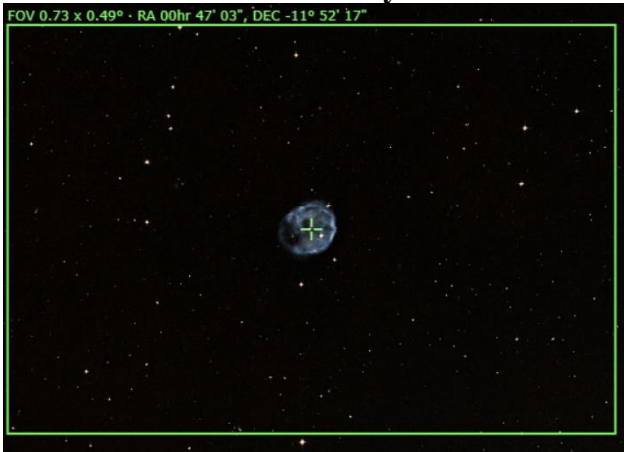
Prospective Imaging Objects – December 12 2023

<p>NGC-147 & NGC-185 Config: C11-HD FR ZWO6200MC</p> <p>Type: Galaxy Pair</p> <p>Constellation: Cassiopeia Coordinates: Frame 01 RA: 00hr 38' 33" DEC: 48° 25' 44" Frame 02 RA: 00hr 33' 21" DEC: 48° 25' 44"</p> <p>Close Star: SAO-21609 (Shedar) Catalog Objects: NGC-147, NGC-185 Imaging Window: 06:49 – 11:26 Transit: 07:36 75°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer Composite!</p>  <p style="font-size: small;">Dwarf Galaxies NGC-185, NGC-147 Constellation: Cassiopeia RA = 00h 33m 00s DEC = 48deg 25' 44.00" Size = 12.1 x 9.2 arcmin Orientation: 0.84deg E of N Pixel scale = 0.87 arcsec/pixel Date Taken: 2023-11-10 20:14:11 Location: Cheshire, CT Config: C11 HD Focal Reducer Filter: Baader Strömgren Filter Filter: QHY128K Exposure: 60s 3000 Stacked: 1000 Processed: 1000 Filter: QHY128K Exposure: 60s 3000 Stacked: 1000 Processed: 1000</p>
<p>NGC-147 Config: ZWO6200MC </p> <p>Type: Galaxy Peak: Constellation: Cassiopeia Coordinates: 00h 33' 07.245" 48° 30' 18.030"</p> <p>Close Star: SAO-37375 Catalog Objects: NGC-147</p> <p>Imaging Window: 06:49 – 11:26 Transit: 07:36 75°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small;">Dwarf Galaxy NGC-147 Constellation: Cassiopeia RA = 00h 33m 07.245s DEC = 48deg 30' 18.030" Size = 49.7 x 33.5 arcmin Pixel scale = 0.579 arcsec/pixel Date Taken: 2023-11-10 Location: Southbury, Connecticut, Fairfield, CT Config: C11 LF Corrector Baader Strömgren Filter QHY128K Exposure: 60s 3000 Stacked: 1000 Processed: 1000</p>
<p>NGC-185 Config: C11-HD ZWO6200MC</p> <p>Type: Dwarf Spheroidal Galaxy</p> <p>Constellation: Cassiopeia Coordinates: 00h 38' 58" 48° 20' 14"</p> <p>Close Star: SAO-21609 (Shedar) Catalog Objects: NGC-185 Imaging Window: 06:49 – 11:32 Transit: 07:42 75°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">FOV 0.73 x 0.49° - RA 00hr 38' 58", DEC 48° 20' 14" Date Taken: 2023-11-10 Location: Southbury, Connecticut, Fairfield, CT Config: C11 LF Corrector Baader Strömgren Filter QHY128K Exposure: 60s 3000 Stacked: 1000 Processed: 1000</p>




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<p>M-110 Config: C11-HD ZWO6200MC</p> <p>Type: Elliptical Galaxy</p> <p>Constellation: Andromeda Coordinates: 00h 40' 22" 41° 41' 07"</p> <p>Close Star: SAO-73765 (Sirrah) Catalog Objects: M-110 Imaging Window: 06:49 – 11:32 Transit: 07:46 82°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">M-110 (NGC-205) Constellation: Andromeda RA = 00h 40m 21.0s, DEC = +41d 41' 07.0" (Star = 41.2 27.2 arcsec / Orientation: 0 Mag. of N / Pixel scale = 0.466 arcsecond / F1-C11HD) Image taken: 2023-11-11, 20:00:00 UTC, Location: Chaska, MN Camera: C-11 HD, Filter: None, Gain: 1000, ISO: 1600 Exposure: 120s, Filter: None, Gain: 1000, Offset: 100</p>
<p>M-32 Config: C11-HD ZWO6200MC</p> <p>Type: Elliptical Galaxy</p> <p>Constellation: Andromeda Coordinates: 00h 42' 42" 40° 51' 57"</p> <p>Close Star: SAO-73765 (Sirrah) Catalog Objects: M-32 Imaging Window: 06:49 – 11:32 Transit: 07:46 82°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">FOV 0.73 x 0.49° - RA 00hr 42m 42s, DEC 40° 51' 57"</p>
<p>Andromeda Galaxy (M 31) Config: C11 HS ZWO6200MCc </p> <p>Type: Galaxy Peak: Oct 1 Constellation: Andromeda Coordinates: 00h 43' 03.089" 41° 18' 37.05"</p> <p>Close Star: SAO-54281 Catalog Objects: M-31, M-32, M-110, NGC-224, NGC-206</p> <p>Imaging Window: 06:49 – 11:32 Transit: 07:46 82°</p>	<p style="text-align: center;">Hyperstar</p>  <p style="font-size: small;">The Great Andromeda Galaxy (M-31 & M32) Constellation: Andromeda Image taken: 2023-11-11 Location: Maunabo Campground, Hualapai, AZ Camera: C-11 HyperStar (QHY128L) Exposure: 120s, Filter: None, Gain: 1000, Offset: 100</p>

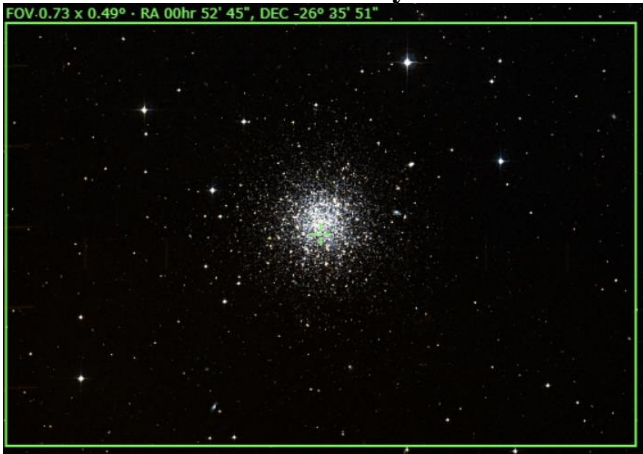
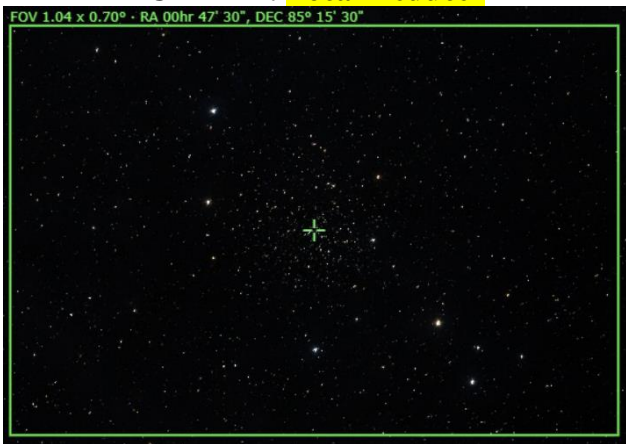

Prospective Imaging Objects – December 12 2023

<p>M-31, M-32 Config: C11-HD HS ZWO6200MC</p> <p>Type: Andromeda Galaxy</p> <p>Constellation: Andromeda Coordinates: 00h 42' 44" 41° 16' 08" Angle: 133° East</p> <p>Close Star: SAO-73765 (Sirrah) Catalog Objects: M-31, M-32 Imaging Window: 06:49 – 11:32 Transit: 07:46 82°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small; text-align: center;">The Andromeda Galaxy (M-31, M-32, NGC-224) <small>Constellation: Andromeda</small></p> <p style="font-size: x-small; text-align: right;">Image taken: 2023-11-12 21:15:15 Location: Okanabe, AZ Config: C11-HD HyperStar v4 ZWO6200MC F1.1-1000nm Exposure: 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000</p>
<p>NGC246, NGC255, PGC 2689 Config: C11-HD HS ZWO6200MC</p> <p>Type: Planetary Nebula, 2 Galaxies</p> <p>Constellation: Cetus Coordinates: 00h 47' 00" -11° 40' 40"</p> <p>Close Star: SAO-147420 (Diphda) Catalog Objects: NGC-246 Imaging Window: *06:49 – 10:34 Transit: 07:50 45°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p style="font-size: small; text-align: center;">Skull Nebula (NGC-246) and Galaxy NGC-255 <small>Constellation: Cetus the Whale</small></p> <p style="font-size: x-small; text-align: right;">Image taken: 2023-11-12 21:15:15 Location: Okanabe, AZ Config: C11-HD 0.7 Focal Reducer F1.1-1000nm ZWO6200MC Exposure: 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000</p>
<p>Skull Nebula (NGC-246) Config: C11-HD ZWO6200MC</p> <p>Type: Planetary Nebula</p> <p>Constellation: Cetus Coordinates: 00h 47' 03" -11° 52' 17"</p> <p>Close Star: SAO-147420 (Diphda) Catalog Objects: NGC-246 Imaging Window: *06:49 – 10:34 Transit: 07:50 45°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small; text-align: center;">FOV 0.73 x 0.49° - RA 00hr 47' 03", DEC -11° 52' 17"</p> <p style="font-size: x-small; text-align: right;">Image taken: 2023-11-12 21:15:15 Location: Okanabe, AZ Config: C11-HD Primary Focus F1.1-1000nm ZWO6200MC Exposure: 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000</p>


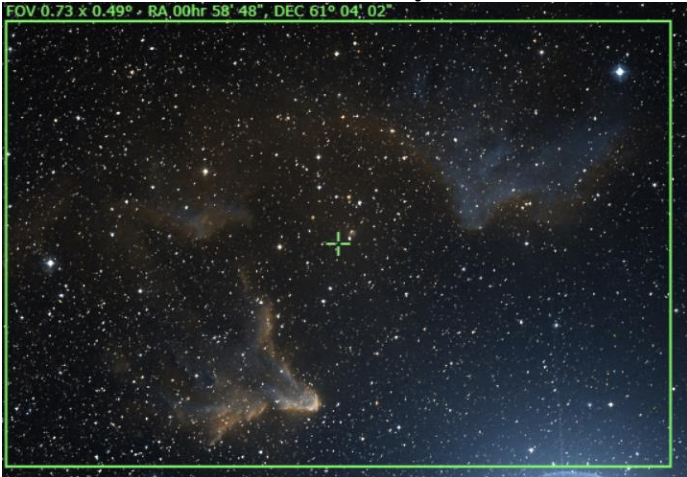
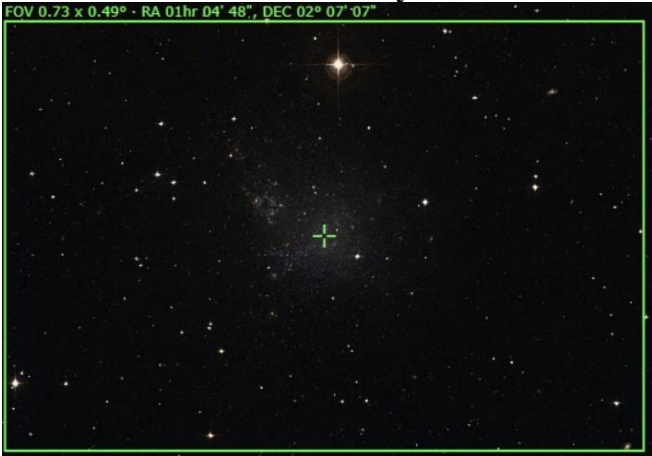
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<p>Needle's Eye Galaxy (NGC 247) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Peak: Constellation: Cetus Coordinates: 00hr 47' 12" -20° 44' 38"</p> <p>Close Star: SAO-147420 Catalog Objects: NGC 247</p> <p>Imaging Window: *06:49 – 10:17 Transit: 07:50 36°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Needle's Eye Galaxy (NGC-247) Constellation: Cetus RA = 00h 47m 12s, DEC = -20deg 44' 38" Size = 41.1 x 27.7 pixels Orientation: 6.6Mag E of N Pixel scale = 0.448 arcsec/pixel FL = 2000mm</p> <p style="font-size: x-small; text-align: right;">James Yoder Date(s) 2023/04/11, 2023/04/12 Location: Chandler, AZ Config: C-11 HD Shadur Ringlow QHY128K Exposure Info: 2000sec/Frame Gain: 3200 Offset: 100</p>
<p>NGC-288, NGC-253 Config: C11-HD HS ZWO6200MC</p> <p>Type: Globular and Galaxy</p> <p>Constellation: Sculptor Coordinates: 00h 50' 03" -25° 54' 37"</p> <p>Close Star: SAO-147420 (Diphda) Catalog Objects: NGC-288, NGC-253 Imaging Window: *06:49 – 09:49 Transit: 07:50 30°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">Sculptor galaxy (NGC-253) and Globular Cluster (NGC-288) Constellation: Sculptor RA = 00h 49m 07s, DEC = -25deg 54' 45.6" Size = 3.14 x 2.09 deg Orientation: 0Mag E of N Pixel scale = 1.228 arcsec/pixel FL = 540mm</p> <p style="font-size: x-small; text-align: right;">James Yoder Date(s) 2020/12/14 Location: Maricopa Grand Trailhead, AZ Config: C-11HD HyperStar v4 Shadur Ringlow QHY128K Exposure Info: 2100sec/Frame Gain: 3200 Offset: 100</p>
<p>Sculptor Galaxy (NGC-253) Config: C11-HD ZWO6200MC</p> <p>Type: Spiral Galaxy</p> <p>Constellation: Sculptor Coordinates: 00h 47' 33" -25° 17' 15"</p> <p>Close Star: SAO-147420 (Diphda) Catalog Objects: NGC-253 Imaging Window: *06:49 – 09:49 Transit: 07:50 30°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Sculptor Galaxy (NGC 253) Constellation: Sculptor</p> <p style="font-size: x-small; text-align: right;">James Yoder Date(s) 2023/08/21 Location: Chandler, AZ Config: C11 Sautters L.F. Corrector Shadur Moon Filter QHY128K Exposure Info: 1000sec/Frame Gain: 3200 Offset: 100</p>

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<p>NGC-288 Config: C11-HD ZWO6200MC</p> <p>Type: Globular Cluster</p> <p>Constellation: Sculptor Coordinates: 00h 52' 45" -26° 35' 51"</p> <p>Close Star: SAO-147420 (Diphda) Catalog Objects: NGC-288 Imaging Window: *06:49 – 09:44 Transit: 07:55 31°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>NGC-188 Config: C11-HD FR ZWO6200MC</p> <p>Type: Open Cluster</p> <p>Constellation: Cepheus Coordinates: 00h 47' 30" 85° 15' 30"</p> <p>Close Star: SAO-308 (Polaris) Catalog Objects: NGC-188 Imaging Window: *06:49 – 04:28 Transit: 07:50 38°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>Packman Nebula (NGC-281) Config: C11-HD FR ZWO6200MC</p> <p>Type: Diffuse Nebula</p> <p>Constellation: Cassiopeia Coordinates: 00h 53' 00" 56° 37' 00"</p> <p>Close Star: SAO-11482 (Navi) Catalog Objects: NGC-281 Imaging Window: 06:49 – 11:44 Transit: 07:56 67°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 

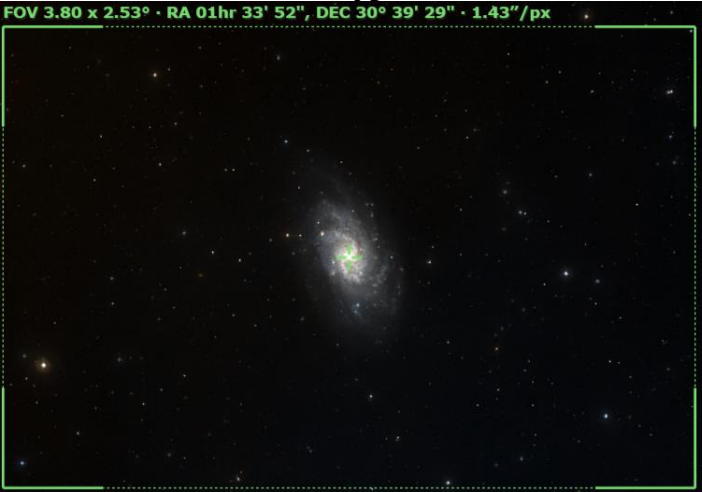


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<p>Gamma Cassiopeiae Nebula (SH2-185) Config: C11-HD HS ZWO6200MC</p> <p>Type: Bright Nebula</p> <p>Constellation: Cassiopeia Coordinates: 01h 03' 11" 60° 42' 24"</p> <p>Close Star: SAO-11482 (Navi) Catalog Objects: SH2-185 Imaging Window: 06:49 – 11:43 Transit: 07:59 62°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small; text-align: center;">Gamma Cassiopeiae Nebula (SH2-185, ICB-620, IC-59 & IC-163) Copyright © 2023 FOV 0.73 x 0.49° - RA 01h 03' 11", DEC 60° 42' 24"</p>
<p>Gamma Cassiopeiae Nebula (IC-59, IC-63) Config: C11-HD HS ZWO6200MC</p> <p>Type: Bright Nebula</p> <p>Constellation: Cassiopeia Coordinates: 00h 58' 48" 61° 04' 02"</p> <p>Close Star: SAO-11482 (Navi) Catalog Objects: SH2-185 Imaging Window: 06:49 – 11:43 Transit: 07:59 62°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small; text-align: center;">FOV 0.73 x 0.49° - RA 00h 58' 48", DEC 61° 04' 02"</p>
<p>IC-1613 Config: C11-HD ZWO6200MC</p> <p>Type: Irregular Dwarf Galaxy</p> <p>Constellation: Cetus Coordinates: 01h 04' 48" 02° 07' 07"</p> <p>Close Star: SAO-75151 (Hamal) Catalog Objects: IC-1613 Imaging Window: 06:49 – 10:26 Transit: 08:07 59°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small; text-align: center;">FOV 0.73 x 0.49° - RA 01h 04' 48", DEC 02° 07' 07"</p>




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<p>Minkowski's Object (Arp-133) Config: C11-HD HS ZWO6200MC</p> <p>Type: Galaxy Cluster Constellation: Cetus Coordinates: 01h 25' 27" -01° 29' 03"</p> <p>Close Star: SAO-75151 (Hamal) Catalog Objects: ARP-133 Imaging Window: 06:49 – 10:30 Transit: 08:28 55°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>
<p>Firefox Nebula (Sh 2-188) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Cassiopeia Coordinates: 01h 31' 37" 58° 21' 22"</p> <p>Close Star: SAO-22268 (Ruchbah) Catalog Objects: Sh 2-188</p> <p>Imaging Window: 06:49 – 12:20 Transit: 08:33 65°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>
<p>M-103 (NGC-581) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster Constellation: Cassiopeia Coordinates: 01h 33' 31" 60° 39' 44"</p> <p>Close Star: ISO-22268 (Ruchbah) Catalog Objects: M-103/NGC-581</p> <p>Imaging Window: 06:49 – 12:20 Transit: 08:36 63°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>

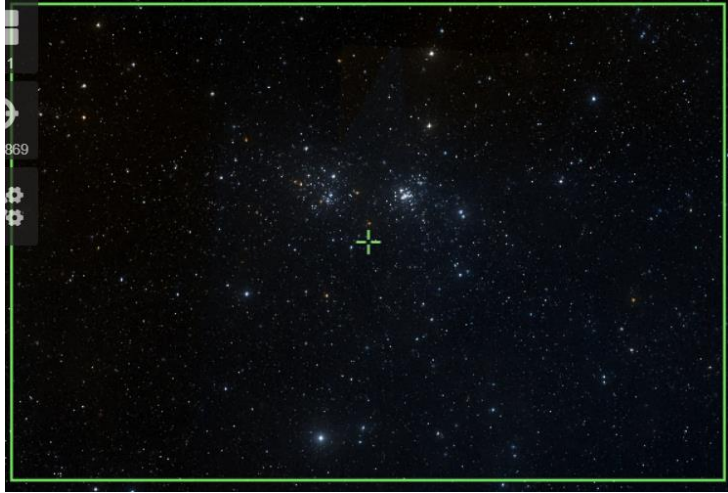


Prospective Imaging Objects – December 12 2023

<p>Triangulum Galaxy (M-33) Config: C11 HS ZWO6200MC</p> <p>Type: Galaxy Constellation: Triangulum Coordinates: 01h 33' 52" 30° 39' 29"</p> <p>Close Star: SAO-74996 Catalog Objects: M33, NGC598</p> <p>Imaging Window: 06:49 – 12:10 Transit: 08:37 87°</p>	<p>C-11 HD: HyperStar v4</p> 
<p>Triangulum Galaxy (M-33) Config: C11-HD FR ZWO6200MC </p> <p>Type: Galaxy Peak: Oct 14 Constellation: Triangulum</p> <p>Camera Rotation - 90° Coordinates: 01h 33' 52" 30° 39' 29"</p> <p>Close Star: SAO-74996 Catalog Objects: M33, NGC598</p> <p>Imaging Window: 06:49 – 12:10 Transit: 08:37 87°</p>	<p>CH11-HD Focal Reducer 90° Rotation</p> 
<p>Triangulum Galaxy (M-33) Config: ZWO6200MC </p> <p>Type: Galaxy Peak: Oct 14 Constellation: Triangulum Coordinates: 01° 34' 53.37" 30° 45' 11.2"</p> <p>Close Star: SAO-74996 Catalog Objects: M33, NGC598</p> <p>Imaging Window: 06:49 – 12:10 Transit: 08:37 87°</p>	<p>Primary Focus</p> 


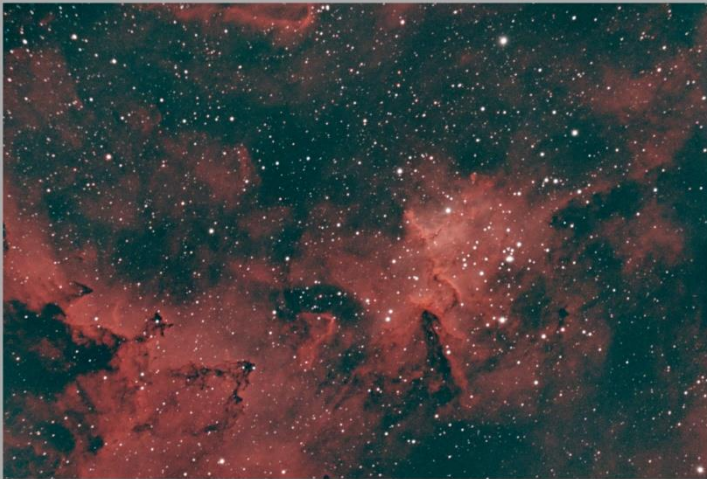

Prospective Imaging Objects – December 12 2023

<p>M-74 Config: C11HD ZWO6200MC </p> <p>Type: Spiral Galaxy Peak: Constellation: Pisces Coordinates: 01h 36' 42" 15° 46' 60"</p> <p>Close Star: ISO-91781 (Algenib) Catalog Objects: M-74</p> <p>Imaging Window: 06:49 – 11:43 Transit: 08:39 72°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Spiral Galaxy M-74 (NGC-628) Constellation: Pisces RA = 01h 36m 42.52s DEC = +15deg 46' 59.83" Size = 42.1 x 28.5 arcmin (Pixel scale = 0.441 arcsec/pix) James VanDer Meer (2012-01-01) Location: Messier grounds, Terschelling, AZ Country: NL (11 020 0071781) Exposure Info: 080img/Sum (Gain: 3200) (Offset: 180)</p>
<p>Little Dumbbell Nebula (M-76) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Peak: Constellation: Perseus Coordinates: 01h 42' 18" 51° 34' 17"</p> <p>Close Star: ISO-37375 Catalog Objects: M-76</p> <p>Imaging Window: 06:49 – 12:35 Transit: 08:45 72°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Little Dumbbell Nebula (M-76, NGC-650) Constellation: Perseus RA = 01h 42m 15.11s DEC = +51deg 34' 17.5" Size = 36.8 x 24.5 arcmin (Orientation: 0.4deg E of N) (Pixel scale = 0.446 arcsec/pix) (FL=2000mm) James VanDer Meer (2020-10-14), Chandra (2020-10-10), AZ Country: NL (11 020 0071781) Exposure Info: 480img/Sum (Gain: 3200) (Offset: 180)</p>
<p>Nautilus Galaxy (NGC-772) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Peak: Constellation: Aries Coordinates: 01h 59' 19" 19° 00' 27"</p> <p>Close Star: ISO-75012 (Sheratan) Catalog Objects: NGC-772</p> <p>Imaging Window: 06:49 – 12:14 Transit: 09:02 76°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Nautilus Galaxy (NGC-772) Constellation: Aries RA = 01h 59m 19.11s DEC = +19deg 00' 27.5" Size = 36.8 x 24.5 arcmin (Orientation: 0.4deg E of N) (Pixel scale = 0.446 arcsec/pix) (FL=2000mm) James VanDer Meer (2020-10-14), Chandra (2020-10-10), AZ Country: NL (11 020 0071781) Exposure Info: 480img/Sum (Gain: 3200) (Offset: 180)</p>




Prospective Imaging Objects – December 12 2023

<p>Hand chi Persei (NGC 869, 884) Config: C11-HD HS ZWO6200MC</p> <p>Type: Double Open Cluster Peak: October 28 Constellation: Perseus Coordinates: 02hr 20' 31" 56° 54' 05"</p> <p>Close Star: SAO-22258 (Ruchbah) Catalog Objects: NGC 869, 884</p> <p>Imaging Window: 06:49 – 01:13 Transit: 09:25 66°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 
<p>Edge On Galaxy (NGC 891) Config: C1 LF ZWO6200MC </p> <p>Type: Galaxy Peak: Oct 27 Constellation: Andromeda Coordinates: 02h 23' 43.29" 42° 25' 46.4"</p> <p>Close Star: SAO-37734 Catalog Objects: NGC891</p> <p>Imaging Window: 06:49 – 01:12 Transit: 09:25 81°</p>	<p style="text-align: center;">Primary Focus</p>  <p><small>Edge On Spiral Galaxy NGC 891</small></p> <p><small>Jumbo Yoda's 2014.11.23</small></p>
<p>NGC-925 (PGC 9332) Config: C11-HD ZWO6200MC </p> <p>Type: Galaxy Constellation: Triangulum Coordinates: 02h 27' 17" 33° 34' 44"</p> <p>Close Star: SAO-55306 (Beta Trianguli) Catalog Objects: NGC925/PGC9332</p> <p>Imaging Window: 06:49 – 01:08 Transit: 09:30 90°</p>	<p style="text-align: center;">Primary Focus</p>  <p><small>NGC-925</small></p> <p><small>Primary Focus Galaxy in Triangulum</small></p> <p><small>Copyright © 2014 by Jumbo Yoda's Astro-Imaging. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without the prior written permission of Jumbo Yoda's Astro-Imaging.</small></p>




Prospective Imaging Objects – December 12 2023

<p>Heart Nebula (IC 1805) Config: C11-HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula Constellation: Cassiopeia Coordinates: 02hr 26' 36" 62° 06' 53"</p> <p>Close Star: SAO-12031 Catalog Objects: IC 1805</p> <p>Imaging Window: 06:49 – 01:18 Transit: 09:35 63°</p>	<p style="text-align: center;">CH11-HD Focal Reducer</p>  <p style="font-size: small;">Heart Nebula core (IC-1805) Constellation: Cassiopeia Location: Cassiopeia, AZ Config: C11-HD 0.7 Reducer Astromaster CLS-CCD QHY192C Exposure Info: 2023-11-12 21:00:00</p>
<p>Heart Nebula (IC-1805) Config: C1 LF ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: October 31 Constellation: Cassiopeia Coordinates: 02hr 32' 42" 61° 27' 00"</p> <p>Close Star: SAO-12031 Catalog Objects: IC 1805</p> <p>Imaging Window: 06:49 – 01:18 Transit: 09:35 63°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small;">Heart Nebula Core (IC-1805) Constellation: Cassiopeia Location: Cassiopeia, AZ Config: C1 Startrac LF Reducer OPT Trak Elite QHY192C Exposure Info: 2023-11-12 21:00:00</p>
<p>M-77, NGC 1055 Config: C11-HD FR ZWO6200MC </p> <p>Type: Galaxy Peak: Constellation: Cetus Coordinates: 02hr 42' 14" 00° 14' 28" Angle: 90°</p> <p>Close Star: SAO-110665 Catalog Objects: M-77, NGC-1055, NGC-1068</p> <p>Imaging Window: 07:34 – 11:55 Transit: 09:44 57°</p>	<p style="text-align: center;">CH11-HD Focal Reducer</p>  <p style="font-size: small;">Galaxies NGC-1055, M-77, NGC-1072 Constellation: Cetus Location: Cetus, AZ Config: C11-HD 0.7 Reducer Filters: Baader Skyglow, CLS-CCD, IDAS LPS-42 Camera: QHY192C Exposure Info: 2023-11-12 21:00:00</p>


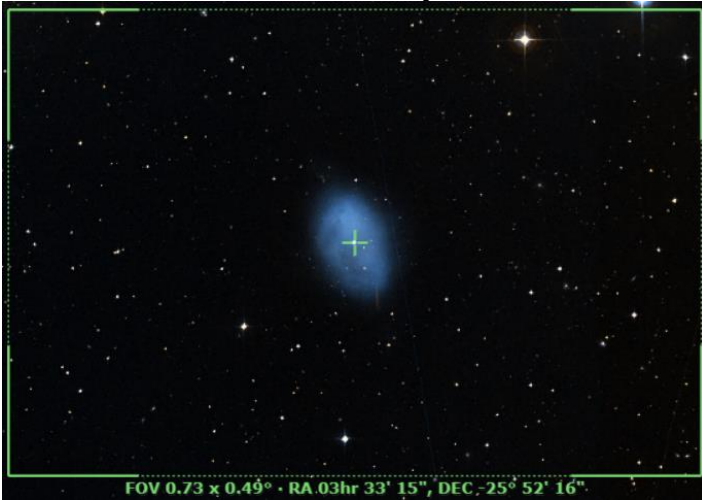

Prospective Imaging Objects – December 12 2023

<p>NGC-1055 Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Peak: Constellation: Cetus Coordinates: 02hr 41' 50" 00° 29' 48"</p> <p>Close Star: SAO-110665 Catalog Objects: NGC-1055</p> <p>Imaging Window: 07:34 – 11:55 Transit: 09:44 57°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>M 77 (NGC 1068) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Peak: Constellation: Cetus Coordinates: 02hr 42' 34" 00° 02' 07"</p> <p>Close Star: SAO-110665 Catalog Objects: M 77, NGC-1068</p> <p>Imaging Window: 07:37 – 11:53 Transit: 09:45 57°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>M-34 (NGC-1039) Config: C11-HD ZWO6200MC </p> <p>Type: Open Cluster Constellation: Perseus Coordinates: 02h 42' 05" 42° 45' 42"</p> <p>Close Star: SAO-38592 (Algol) Catalog Objects: M-34/NGC-1039</p> <p>Imaging Window: 06:49 – 01:32 Transit: 09:45 81°</p>	<p style="text-align: center;">Primary Focus</p> 




Prospective Imaging Objects – December 12 2023

<p>Soul Nebula (IC-1848) Config: C11-HD HS ZWO6200MC</p> <p>Type: Diffuse Nebula Peak: Constellation: Cassiopeia Coordinates: 02hr 57' 16" 60° 37' 37"</p> <p>Close Star: SAO-38787 (Mirfak) Catalog Objects: IC 1848</p> <p>Imaging Window: 06:49 – 01:38 Transit: 09:54 63°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">Soul Nebula (IC-1848) Constellation: Cassiopeia</p> <p style="font-size: x-small; text-align: right;">James Yule - 2018-08-20 Location: Chandler, AZ Config: C11 HyperStar Amonik L18C ZWO 6200MC Exposure Info: 260ms x 5min Gain: 3200 Offset: 180</p>
<p>Soul Nebula (IC-1848) Config: C1 LF ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Cassiopeia Coordinates: 02hr 57' 16" 60° 37' 37"</p> <p>Close Star: SAO-38787 (Mirfak) Catalog Objects: IC 1848</p> <p>Imaging Window: 06:49 – 01:38 Transit: 09:54 63°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small;">Soul Nebula (IC-1848) Constellation: Cassiopeia</p> <p style="font-size: x-small; text-align: right;">James Yule - 2018-12-08 Location: Chandler, AZ Config: C11 Stratus LF Rabe D1843 Star QHY 128C Exposure Info: 270ms x 5min Gain: 3200 Offset: 180</p>
<p>Perseus Galaxy Cluster Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Cluster Peak: Constellation: Perseus Coordinates: 03hr 19' 58" 41° 29' 13"</p> <p>Close Star: SAO-38592 (Algol) Catalog Objects: Abell-426, NGC1275, 1278, 1272, Et. El.</p> <p>Imaging Window: 06:49 – 02:08 Transit: 10:22 82°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December 12 2023

<p>NGC-1333 Config: C11HD ZWO6200MC </p> <p>Type: Bright Nebula Peak: November 13 Constellation: Perseus Coordinates: 03hr 29' 15" 31° 20' 12"</p> <p>Close Star: SAO-56799 Catalog Objects: NGC 1333</p> <p>Imaging Window: 08:43 – 12:30 Transit: 10:36 88°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p>A wide-field astronomical image showing a cluster of stars. A bright star is marked with a green crosshair. The image is framed by a green border. On the left side, there are control icons and the number '333'.</p>
<p>Robins Egg Nebula (NGC-1360) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Peak: Constellation: Fornax Coordinates: 03hr 33' 15" -25° 52' 16"</p> <p>Close Star: SAO-168460 Catalog Objects: NCC-1360</p> <p>Imaging Window: *08:43 – 12:24 Transit: 10:36 31°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p>A wide-field astronomical image showing a bright blue nebula. A green crosshair is centered on the nebula. The image is framed by a green border. At the bottom, text reads: "FOV 0.73 x 0.49° - RA 03hr 33' 15", DEC -25° 52' 16".</p>
<p>IC-348 Config: C11HD ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Perseus Coordinates: 03hr 44' 26" 32° 10' 54"</p> <p>Close Star: SAO-147420 Catalog Objects: IC-348</p> <p>Imaging Window: 07:11 – 02:23 Transit: 10:47 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p>A wide-field astronomical image showing a bright star with a large, diffuse nebula. A green crosshair is centered on the star. The image is framed by a green border. On the left side, there are control icons and the number '48'.</p>



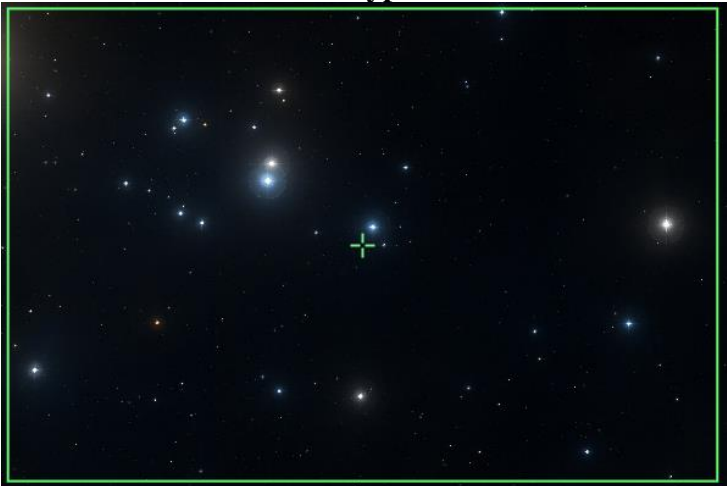
Prospective Imaging Objects – December 12 2023

<p>IC-342 Config: C11HD ZWO6200MC </p> <p>Type: Barred Spiral Galaxy Peak: Constellation: Camelopardalis Coordinates: 03hr 46' 48" 68° 05' 44"</p> <p>Close Star: SAO-12031 (Segin) Catalog Objects: IC-342</p> <p>Imaging Window: 07:27 – 02:11 Transit: 10:49 55°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Pleiades (M 45) Config: C11-HD HS ZWO6200MC</p> <p>Type: Bright Nebula Peak: November 16 Constellation: Taurus Coordinates: 03hr 46' 07" 24° 11' 18"</p> <p>Close Star: SAO-56799 Catalog Objects: M45</p> <p>Imaging Window: 07:27 – 02:12 Transit: 10:49 81°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">The Pleiades (M-45) Constellation: Taurus</p> <p style="font-size: x-small; text-align: right;">James VanDerKam, 2018-10-05 Location: Mountain View, CA Config: C11 HyperStar v4 Exposure Info: 200ms/Star (Gain: 1000) Offset: 150</p>
<p>Pleiades (M-45) Config: C1 LF ZWO6200MC </p> <p>Type: Bright Nebula Peak: November 16 Constellation: Taurus Coordinates: 03hr 46' 15.932" 24° 12' 07.154"</p> <p>Close Star: SAO-56799 Catalog Objects: M45</p> <p>Imaging Window: 07:27 – 02:12 Transit: 10:49 81°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small;">The Pleiades (M-45) Constellation: Taurus</p> <p style="font-size: x-small; text-align: right;">James VanDerKam, 2018-10-05 Location: Mountain View, CA Config: C11 HyperStar v4 Exposure Info: 200ms/Star (Gain: 1000) Offset: 150</p>


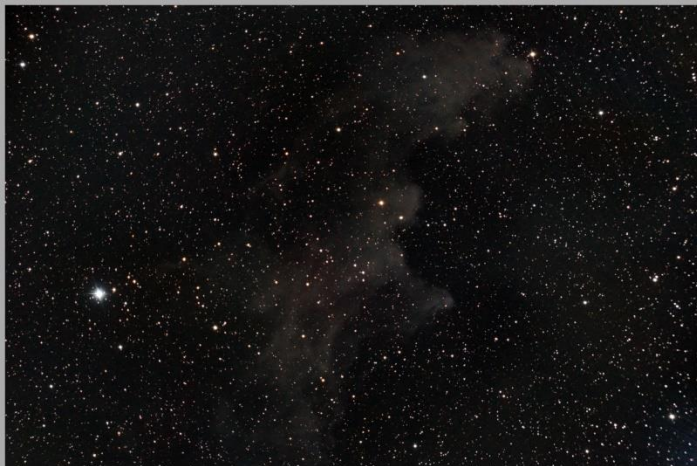

Prospective Imaging Objects – December 12 2023

<p>California Nebula (NGC 1499) Config: C11-HD HS ZWO6200MC</p> <p>Type: Diffuse Nebula Peak: November 22 Constellation: Perseus Coordinates: 04hr 01' 22" 36° 21' 19"</p> <p>Close Star: SAO-56840 Catalog Objects: NGC 1499</p> <p>Imaging Window: 07:24 – 02:47 Transit: 11:05 87°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">California Nebula (NGC-1499) Constellation: Perseus</p> <p style="font-size: x-small; text-align: right;">James Voder 2015.08.31 Location: Chandler, AZ Config: C11 HyperStar Astronomik U.S.A.-C11 C11-120 Exposure Info: 220img/5min Gain: 3200 Offset: 180</p>
<p>Oyster Nebula (NGC 1501) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Constellation: Camelopardalis Coordinates: 04hr 06' 58" 60° 55' 3.5"</p> <p>Close Star: SAO-038787 (Mirfak) Catalog Objects: NGC-1501</p> <p>Imaging Window: 07:26 – 02:53 Transit: 11:09 62°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small;">NGC-1501 (Oyster Nebula) Constellation: Camelopardalis RA = 04h 06m 58.2s DEC = +60deg 55' 03.5" Size = 18.5 x 13.9 arcmin Orientation = 0.5deg E of N Pixel scale = 0.277 arcsec/pixel F1 = 2000mm</p> <p style="font-size: x-small; text-align: right;">James Voder Distro 2021.12.19 Location: Chandler, AZ Config: C-11 HD F1PT Triad Radon Ultra ZWO 6200MC Exposure Info: 67.7img/20min Gain: 100 Offset: 50</p>
<p>Crystal Ball Nebula (NGC 1514) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Constellation: Taurus Coordinates: 04hr 09' 17" 30° 46' 35"</p> <p>Close Star: SAO-56799 Catalog Objects: NGC-1514</p> <p>Imaging Window: 07:38 – 02:45 Transit: 11:11 87°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small;">NGC-1514 (Crystal Ball Nebula) Constellation: Taurus RA = 04h 09m 17.6s DEC = +30deg 46' 35.0" Size = 18.5 x 13.9 arcmin Orientation = 0.5deg E of N Pixel scale = 0.277 arcsec/pixel F1 = 2000mm</p> <p style="font-size: x-small; text-align: right;">James Voder Distro 2020.12.09 Location: Chandler, AZ Config: C-11 HD F1PT Triad Ultra ZWO6200MC Exposure Info: 64.7img/20min Gain: 100 Offset: 50</p>




Prospective Imaging Objects – December 12 2023

<p>Cleopatra's Eye (NGC 1535) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Constellation: Eridanus Coordinates: 04hr 14' 16" -12° 44' 20"</p> <p>Close Star: SAO-131907 (Rigel) Catalog Objects: NGC-1535</p> <p>Imaging Window: *09:05 – 01:53 Transit: 11:16 44°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Planetary Nebula NGC-1535 (Cleopatra's Eye) 2023-11-12 01:53:00 (UTC) Location: Cleopatra, AZ Constellation: Eridanus Config: C-11 HD HyperStar v4 (ZWO6200MC) [RA=04:14:16.15 DEC=-12:44:20.1] Size=22.4x15.1 Distance: 640ly (0.10 N. Polar Scale=0.778 arcsecond) [L=2000mm] Exposure: 300 frames, 3100000000, Gain: 100, Offset: 50</p>
<p>Hind's Variable Nebula (NGC 1555) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Constellation: Taurus Coordinates: 04hr 21' 54" 19° 32' 00"</p> <p>Close Star: SAO-94027 (Aldebaran) Catalog Objects: NGC-1555</p> <p>Imaging Window: 08:11 – 02:37 Transit: 11:24 76°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> <p style="text-align: center; color: green;">FOV 0.73 x 0.48° · RA 04hr 21' 54", DEC 19° 32' 00"</p> 
<p>Hyades (C 41, Mel 25) Config: C11-HD HS ZWO6200MC</p> <p>Type: Open Cluster Constellation: Taurus Coordinates: 04hr 26' 34" 15° 31' 39"</p> <p>Close Star: SAO-56840 Catalog Objects: Mel 25</p> <p>Imaging Window: 08:25 – 02:34 Transit: 11:29 73°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 




Prospective Imaging Objects – December 12 2023

<p>Trifid of the North (NGC 1579) Config: C11HD ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Perseus Coordinates: 04hr 30' 12" 35° 16' 60"</p> <p>Close Star: SAO-56799 Catalog Objects: NGC-1579</p> <p>Imaging Window: 07:52 – 03:12 Transit: 11:32 88°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Witch Head Nebula (IC 2118) Config: C11-HD HS ZWO6200MC</p> <p>Type: Bright Nebula Peak: Constellation: Eridanus Coordinates: 05hr 05' 19.872" -06° 56' 00.365"</p> <p>Close Star: SAO-131794 Catalog Objects: IC 2118</p> <p>Imaging Window: *09:22 – 03:11 Transit: 12:07 49°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">Witch Head Nebula (IC-2118) Constellation: Eridanus RA = 05h 05m 19.872s DEC = -06deg 56' 00.365" Size = 2.66 x 1.78 deg Pixel scale = 2.27 arcsecond </p> <p style="font-size: x-small; text-align: right;">James Yoder 2019-09-28 Location: Chandler, AZ Config: C11 HyperStar Baader Skyglow CDDV 126s Exposure Info: 54frames@90s Gain: 3200 Offset: 180 </p>
<p>Witch Head Nebula (IC 2118) Config: C11HD ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Eridanus Coordinates: 05hr 07' 07" -06° 20' 07"</p> <p>Close Star: SAO-131794 Catalog Objects: IC 2118</p> <p>Imaging Window: *09:22 – 03:11 Transit: 12:07 49°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December 12 2023

<p>Foxface Nebula (NGC 1788) Config: C11 HS ZWO6200MCc Type: Bright Nebula Peak: Constellation: Orion Coordinates: 05hr 06' 10" -04° 04' 26"</p> <p>Close Star: SAO-131794 Catalog Objects: NGC 1788</p> <p>Imaging Window: 10:19 – 01:59 Transit: 12:09 53°</p>	<p style="text-align: center;">Hyperstar</p> 
<p>Foxface Nebula (NGC 1788) Config: C11-HD FR ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Orion Coordinates: 05hr 05' 52" -03° 22' 22"</p> <p>Close Star: SAO-131794 Catalog Objects: NGC 1788</p> <p>Imaging Window: 10:19 – 01:59 Transit: 12:09 53°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>Foxface Nebula (NGC 1788) Config: C11HD ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Orion Coordinates: 05hr 06' 26" -03° 20' 13"</p> <p>Close Star: SAO-131794 Catalog Objects: NGC 1788</p> <p>Imaging Window: 10:19 – 01:59 Transit: 12:09 53°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 



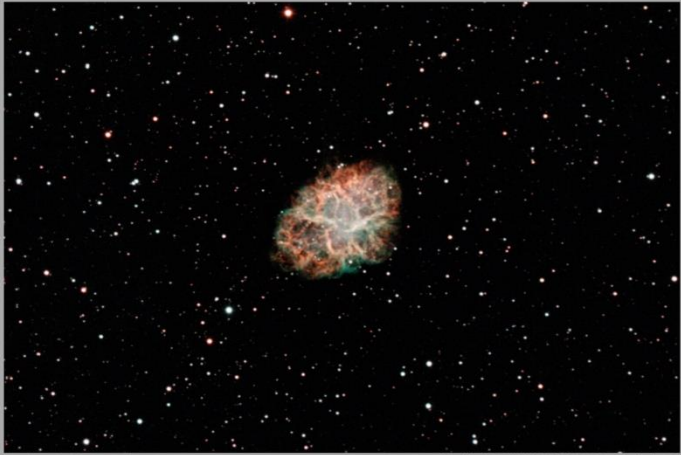
Prospective Imaging Objects – December 12 2023

<p>Tadpoles (IC 410) Config: C11-HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Auriga Coordinates: 05hr 22' 54" 33° 23' 31"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: IC 410</p> <p>Imaging Window: 08:47 – 04:02 Transit: 12:25 90°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p style="font-size: small;">Tadpole Nebula (IC-410) Constellation: Auriga RA: 05h 22m 55.00s, DEC: +33deg 23' 31.00" - 13 May 23 22:48" Size: 18.5 x 18.8 arcmin, Orientation: Mag 5.0 of N, Pixel scale: 0.63 arcsec/pixel, F5-1000nm James Webb (Dewar) 2023 01 01 Location: Chandler, AZ Config: C11-HD 16" Focuser 1.68x Optolong L-Extreme Camera (01/12/23) Exposure Info: 01:00min/Star (Gain: 2300) OIBSI: 100</p>
<p>Tadpoles (IC 410) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Auriga Coordinates: 05hr 22' 37" 33° 23' 03"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: IC 410</p> <p>Imaging Window: 08:47 – 04:02 Transit: 12:25 90°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Tadpole Nebula (IC-410) Constellation: Auriga RA: 05h 22m 35.00s, DEC: +33deg 23' 03.00" - 13 May 23 00:18" Size: 42.4 x 28.8 arcmin, Pixel scale: 0.442 arcsec/pixel James Webb (Dewar) 2023 01 01 Location: Chandler, AZ Config: C11 HD Johnsons 1.6 x 6.0 2300 001/26.1 Exposure Info: 23:00min/Star (Gain: 2300) OIBSI: 100</p>
<p>M-79 (NGC-1904) Config: C11HD Barlow x2 ZWO6200MC </p> <p>Type: Globular Cluster Peak: Constellation: Lepus Coordinates: 05hr 24' 11" -24° 31' 25"</p> <p>Close Star: SAO-170457 Catalog Objects: M 79</p> <p>Imaging Window: *10:23 – 02:26 Transit: 12:26 32°</p>	<p style="text-align: center;">C-11 HD: Primary Focus *x2</p> 

Prospective Imaging Objects – December 12 2023

<p>Spirograph Nebula (IC 418) Config: C11HD Barlow x2 ZWO6200MC </p> <p>Type: Planetary Nebula Constellation: Lepus Coordinates: 05hr 27' 28" -12° 41' 48"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: IC 418</p> <p>Imaging Window: *09:44 – 03:05 Transit: 12:29 44°</p>	<p style="text-align: center;">C-11 HD: Primary Focus *x2</p> 
<p>The Spider and the Fly (M-77, NGC-1055, NGC-1931) Config: C11-HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Auriga</p> <p>Camera Rotation - 90° Frame 01 RA: 05hr 30' 44"DEC: 34° 20' 41" Frame 02 RA: 05hr 27' 55"DEC: 34° 20' 41"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: IC-417, NGC-1931</p> <p>Imaging Window: 08:51 – 04:09 Transit: 12:30 89°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer Composite!</p>  <p style="font-size: small;">The Spider and the Fly (IC-417 & NGC-1931) <small>James VanDerKam (2004) 2004 12 20 21 22 Location: Chandler, AZ Config: C11 HD 1.7 Focuser 1.8x Optical 1.8x Mirror 1.8x Camera (C11 HD) Exposure Info: (Pawsey 2000) (Site: Pawsey 2000) (Site: 2000) (Offset: 100)</small></p>
<p>The Spider (IC 417) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Auriga Coordinates: 05hr 28' 03" 34° 22' 58"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: IC 417</p> <p>Imaging Window: 08:51 – 04:09 Transit: 12:30 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 

Prospective Imaging Objects – December 12 2023

<p>Starfish Cluster (M-38) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster Constellation: Auriga Coordinates: 05hr 28' 43" 35° 51' 18"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: M-38</p> <p>Imaging Window: 08:50 – 04:11 Transit: 12:31 88°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">M-038 Starfish Cluster James Voder 2019.09.30</p>
<p>The Fly (NGC 1931) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Auriga Coordinates: 05hr 31' 24" 34° 15' 00"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: NGC 1931</p> <p>Imaging Window: 08:55 – 04:12 Transit: 12:33 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">931</p>
<p>Crab Nebula (M 1) Config: C1 LF ZWO6200MC </p> <p>Type: Planetary Nebula Peak: Constellation: Taurus Coordinates: 05hr 34' 30" 22° 00' 59.9"</p> <p>Close Star: SAO-77336 Catalog Objects: M 1</p> <p>Imaging Window: 09:18 – 03:55 Transit: 12:36 79°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: x-small;">Crab Nebula (Messier-1) James Voder Date(s) 2022.02.05, 07, 08, 09, 10 Location: Chandler, AZ Config.: C-11 HD Filter: OPI Padua Ultra (OPI128c) Exposure Info: (75xavg)4min Gain: 3200 Offset: 100 Constellation: Taurus RA = 8.344h 31.3s DEC = +22.049 00 34.4" Size = 31.5 x 21.0 arcmin Orientation: -0.34deg Pixel scale = 0.447 arcsec/pixel FL = 2756mm </p>

Prospective Imaging Objects – December 12 2023

The Orion Complex

Config: C11 | HS | ZWO6200MC

Type: **Diffuse Nebula**

Peak:

Constellation: **Orion**

Coordinates:

Frame 01

RA: 05hr 43' 42" DEC: -01° 01' 06"

Frame 02

RA: 05hr 31' 05" DEC: -01° 01' 06"

Frame 03

RA: 05hr 43' 42" DEC: -03° 07' 35"

Frame 04

RA: 05hr 31' 04" DEC: -03° 07' 35"

Frame 05

RA: 05hr 43' 43" DEC: -05° 14' 05"

Frame 06

RA: 05hr 31' 04" DEC: -05° 14' 05"

Close Star: SAO-132542 (Saiph)

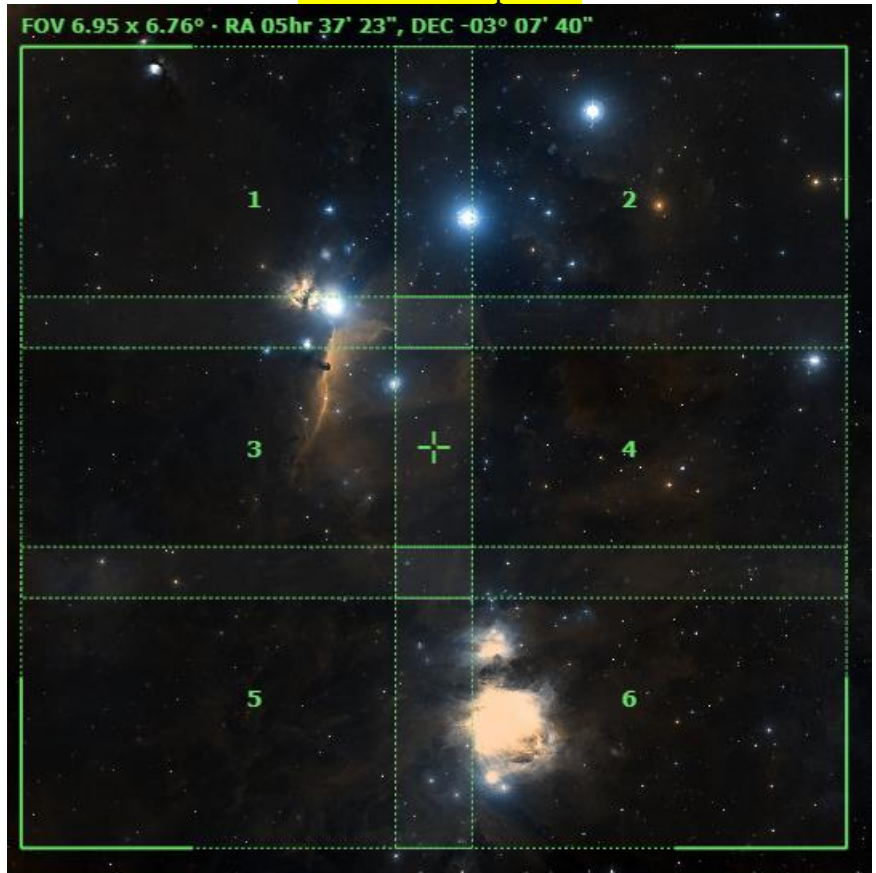
Catalog Objects: [M-42](#)

Imaging Window: 11:01 – 02:14

Transit: 12:37 | 52°

C-11 HD: HyperStar v4

SUPER-6 Composite!



The Orion Nebula (M 42)

Config: C11-HD | HS |

ZWO6200MC

Type: **Diffuse Nebula**

Peak:

Constellation: **Orion**

Coordinates:

05hr 35' 46"

-05° 15' 34"

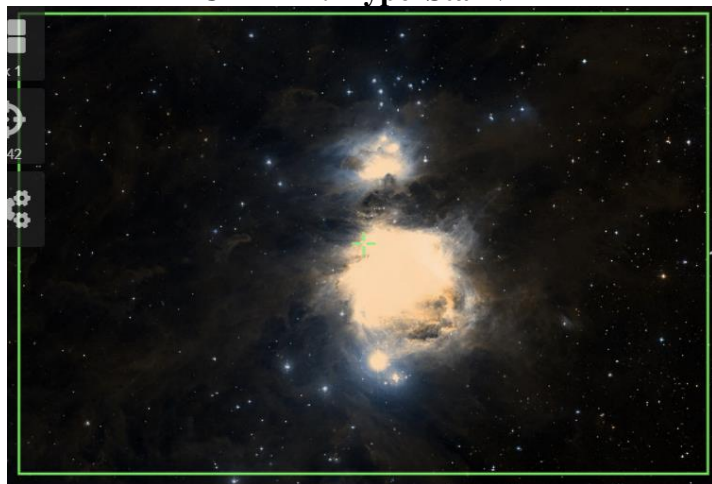
Close Star: SAO-132542 (Saiph)

Catalog Objects: [M 42](#)




Imaging Window: 11:01 – 02:14

Transit: 12:37 | 52°

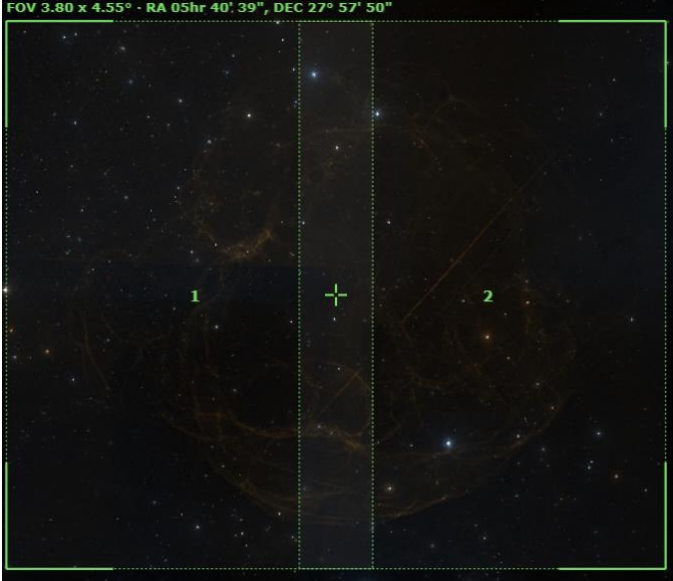
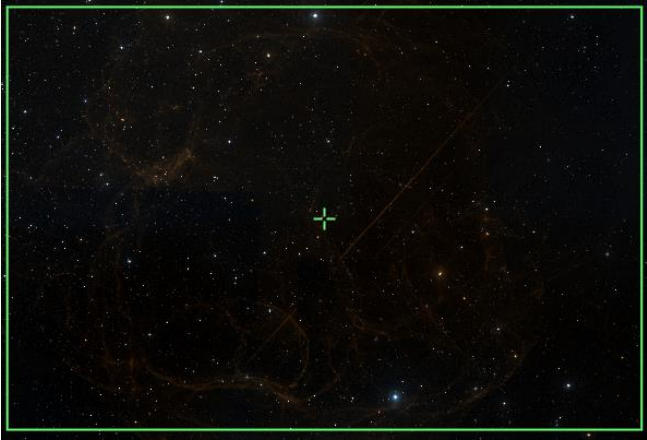
C-11 HD: HyperStar v4






Prospective Imaging Objects – December 12 2023

<p>The Orion Nebula (M 42) Config: C1 LF ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 05hr 35' 09" -05° 24' 32"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: M 42</p> <p>Imaging Window: 11:01 – 02:14 Transit: 12:37 52°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small;">Orion Nebula (M-42) Constellation: Orion</p> <p style="font-size: x-small; text-align: right;">Image Date: 2019-01-15 Location: Chandler, AZ Config: C1 Starizona LE Bulwark 1600MM Para QHY170c Exposure Info: 25frames/30sec Gain: 3200 Offset: 180</p>
<p>Running Man Nebula (NGC 1977) Config: C11-HD FR ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Orion Coordinates: 05hr 35' 16" -04° 41' 47"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: NGC 1977</p> <p>Imaging Window: 10:57 – 02:18 Transit: 12:37 52°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>Pinwheel Cluster (M-36) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster Constellation: Auriga Coordinates: 05hr 36' 18" 34° 08' 27"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: M-36/NGC-1960</p> <p>Imaging Window: 09:00 – 04:17 Transit: 12:38 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small;">Pinwheel Cluster (M-36, NGC-1960) Constellation: Auriga</p>



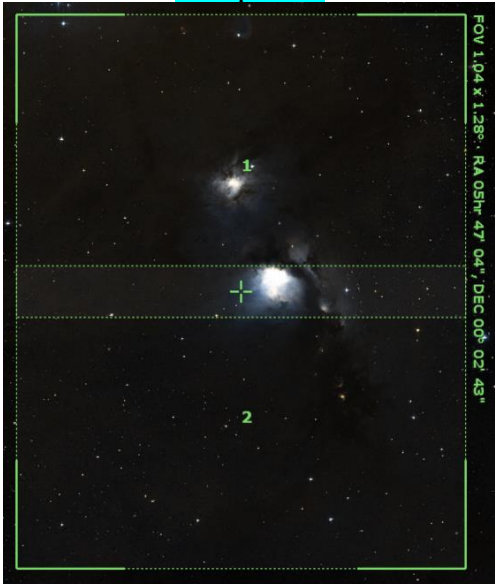
Prospective Imaging Objects – December 12 2023

<p>Simeis 147 (SH2-240) Config: C11-HD HS ZWO6200MC</p> <p>Type: Diffuse Nebula Constellation: Taurus</p> <p>Camera Rotation - 90° Coordinates: Frame 01 RA: 05hr 45' 38" DEC: 27° 56' 31" Frame 02 RA: 05hr 36' 28" DEC: 27° 56' 31"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: SH2-240</p> <p>Imaging Window: 09:12 – 04:10 Transit: 12:41 85°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4 Composite-2</p> 
<p>Simeis 147 (SH2-240) Config: C11-HD HS ZWO6200MC</p> <p>Type: Diffuse Nebula Constellation: Taurus Coordinates: 05hr 39' 04" 28° 00' 00"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: SH2-240</p> <p>Imaging Window: 09:12 – 04:10 Transit: 12:41 85°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 



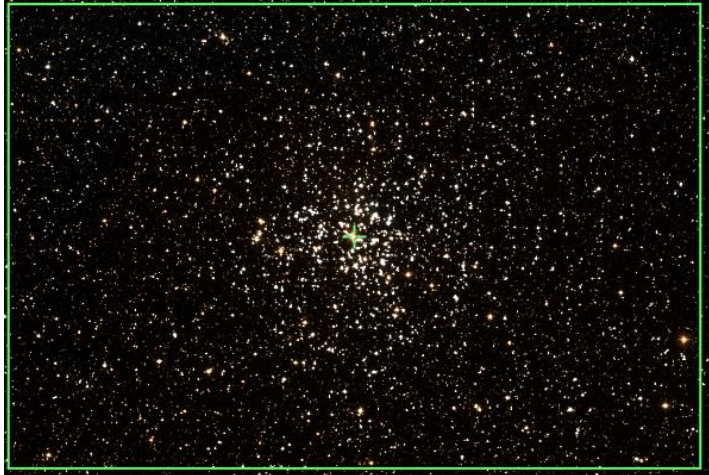
Prospective Imaging Objects – December 12 2023

<p>Flame and Horsehead Nebula (NGC 2024, B 33) Config: C11-HD HS ZWO6200MC</p> <p>Type: Diffuse/Dark Nebula Peak: Constellation: Orion Coordinates: 05hr 40' 04" -02° 28' 13"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: NGC 2024, B 33</p> <p>Imaging Window: 10:48 – 02:38 Transit: 12:43 54°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">Horsehead and Flame Nebula Constellation: Orion</p> <p style="font-size: x-small; text-align: right;">Image Date: 2023-11-12 Location: Mountain View, TN Config: C11 HyperStar (C11 HD) Equipment Info: (HyperStar) Gain: 3000 (Offset: 170)</p>
<p>Flame Nebula (NGC 2024) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 05hr 41' 45.843" -01° 49' 31.401"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: NGC 2024</p> <p>Imaging Window: 10:45 – 02:48 Transit: 12:44 54°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Flame Nebula (NGC-2024) Constellation: Orion</p> <p style="font-size: x-small; text-align: right;">Image Date: 2023-11-12 Location: Chandler, AZ Config: C11 HD (Primary Focus) (C11 HD) Equipment Info: (Primary Focus) Gain: 3000 (Offset: 180)</p>
<p>Horsehead Nebula (B 33) Config: C1 LF ZWO6200MC </p> <p>Type: Dark Nebula Peak: Constellation: Orion Coordinates: 05hr 40' 59" -02° 31' 47"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: B 33</p> <p>Imaging Window: 10:48 – 02:38 Transit: 12:43 54°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small;">Horsehead Nebula (IC-434) Constellation: Orion</p> <p style="font-size: x-small; text-align: right;">Image Date: 2023-11-12 Location: Chandler, AZ Config: C11 (Primary Focus) (C11 HD) Equipment Info: (Primary Focus) Gain: 3000 (Offset: 180)</p>

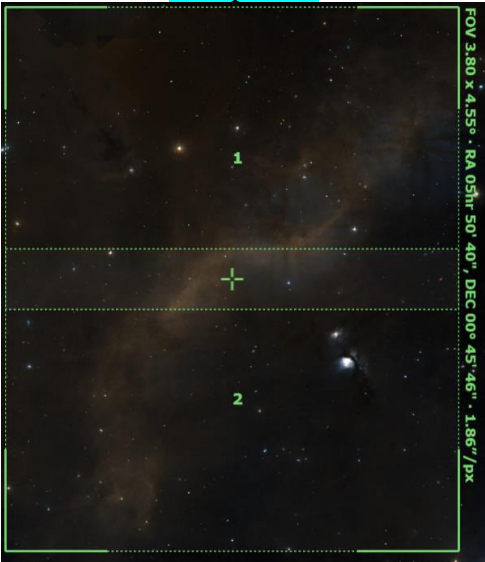
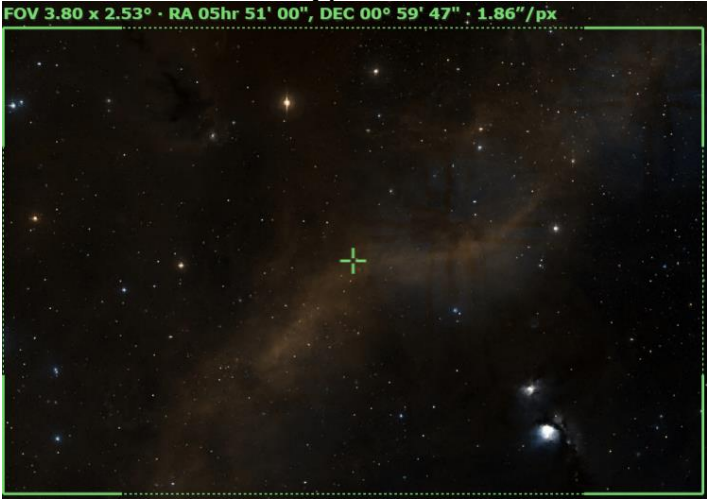
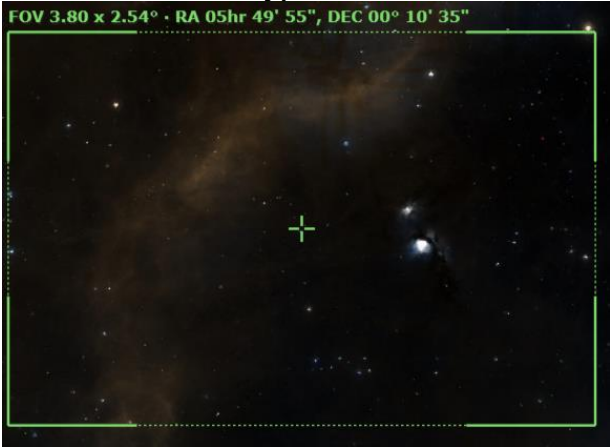
Prospective Imaging Objects – December 12 2023

<p>NGC 2022 Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Peak: Constellation: Orion Coordinates: 05hr 42' 07" 09° 04' 55"</p> <p>Close Star: SAO-112740 (Bellatrix) Catalog Objects: NGC 2022</p> <p>Imaging Window: 10:00 – 03:29 Transit: 12:44 66°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small; text-align: center;">NGC-2022 Constellation: Orion James Yoder (Dane) 2023.12.09.18 Location: Chandler, AZ Config: C-11 HD OPT Froid Ultra ZWO6200MC Exposure Info: 150 frames(2min) Gain: 100 Offset: 50 RA = 05h 42m 06.6s DEC = +09deg 04' 54.9" Size = 18.5 x 13.9 arcmin Orientation: 0.3deg E of N Pixel scale = 0.277 arcsec/pixel FL=2900mm</p>
<p>NGC 1961 Config: C11HD ZWO6200MC </p> <p>Type: Spiral Galaxy Peak: Constellation: Camelopardalis Coordinates: 05hr 43' 27" 69° 20' 48"</p> <p>Close Star: SAO-40750 (Menkalinan) Catalog Objects: NGC 1961</p> <p>Imaging Window: 09:28 – 04:00 Transit: 12:44 54°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small; text-align: center;">Galaxy Cluster (NGC-1961 et al.) Constellation: Camelopardalis James Yoder (Dane) 2023.12.09.12 Location: Chandler, AZ Config: C-11 HD OPT Froid Ultra ZWO6200MC Exposure Info: 100 frames(2min) Gain: 100 Offset: 50 RA = 05h 43m 13.80s DEC = +69deg 20' 48.10" Size = 42.3 x 28.5 arcmin Pixel scale = 0.441 arcsec/pixel</p>
<p>M-78 Config: C11-HD FR ZWO6200MC </p> <p>Type: Dark Nebula Peak: Constellation: Orion</p> <p>Frame 01 RA: 05hr 47' 05"DEC: 00° 20' 09"</p> <p>Frame 02 RA: 05hr 47' 05"DEC: -00° 14' 43"</p> <p>Close Star: SAO-132346 (Alnilam) Catalog Objects: M 78</p> <p>Imaging Window: 10:40 – 02:58 Transit: 12:49</p>	<p style="text-align: center;">C-11 HD: Focal Reducer Composite!</p>  <p style="font-size: small; text-align: center;">FOV 1.04 x 1.28°. RA 05hr 47' 04" DEC 00° 02' 43"</p>

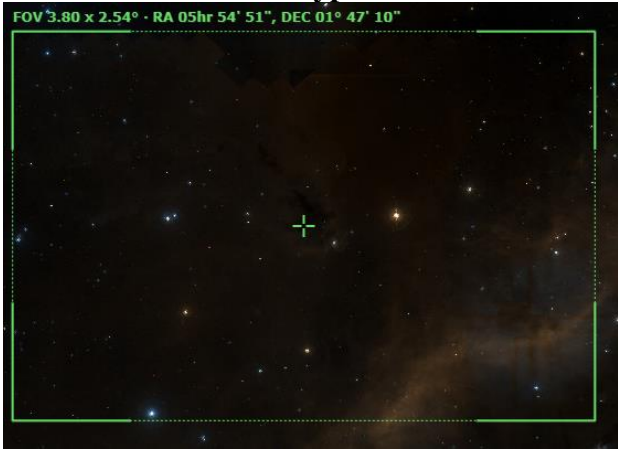

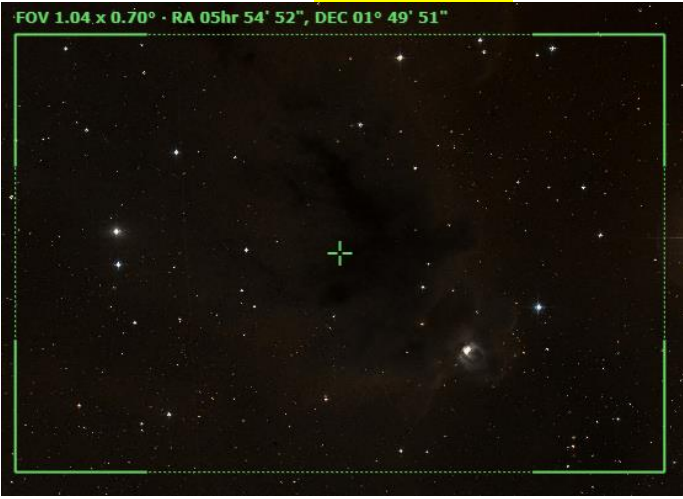
Prospective Imaging Objects – December 12 2023

<p>M-78 Config: C11-HD FR ZWO6200MC </p> <p>Type: Bright and Dark Nebula Peak: Constellation: Orion Coordinates: 05hr 46' 59" 00° 08' 59"</p> <p>Close Star: SAO-132346 (Alnilam) Catalog Objects: M 78</p> <p>Imaging Window: 10:40 – 02:58 Transit: 12:49</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>M-78 Config: C11HD ZWO6200MC </p> <p>Type: Bright and Dark Nebula Peak: Constellation: Orion Coordinates: 05hr 47' 03" 00° 09' 46"</p> <p>Close Star: SAO-132346 (Alnilam) Catalog Objects: M 78</p> <p>Imaging Window: 10:40 – 02:58 Transit: 12:49</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Salt and Pepper Cluster(M-37) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster Constellation: Auriga Coordinates: 05hr 52' 18" 32° 33' 11"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: M-37/NGC-2099</p> <p>Imaging Window: 09:18 – 04:31 Transit: 12:54 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December 12 2023

<p>LDN-1622 Complex Config: C11HD ZWO6200MC </p> <p>Type: Dark Nebula & Nebula Peak: Constellation: Orion</p> <p>Coordinates: Pane 1: 05hr 50' 40", 01° 46' 30" Pane 2, 05hr 50' 40", 00° 14' 57"</p> <p>Close Star: SAO-132346 (Alnilam) Catalog Objects: LDN 1622 Imaging Window: 10:39 – 03:14 Transit: 12:57</p>	<p style="text-align: center;">C-11 HD: HyperStar v4 Composite!</p> 
<p>LDN-1622 (Region 01) Config: C11HD ZWO6200MC </p> <p>Type: Dark Nebula & Nebula Peak: Constellation: Orion</p> <p>Coordinates: 05hr 51' 00" 00° 59' 47"</p> <p>Close Star: SAO-132346 (Alnilam) Catalog Objects: LDN 1622 Imaging Window: 10:39 – 03:14 Transit: 12:57</p>	<p style="text-align: center;">HyperStar</p> 
<p>LDN-1622 (Region 02) Config: C11HD ZWO6200MC </p> <p>Type: Dark Nebula & Nebula Peak: Constellation: Orion</p> <p>Coordinates: 05hr 49' 55" 00° 10' 35"</p> <p>Close Star: SAO-132346 (Alnilam) Catalog Objects: LDN 1622 Imaging Window: 10:39 – 03:14 Transit: 12:57</p>	<p style="text-align: center;">HyperStar</p> 

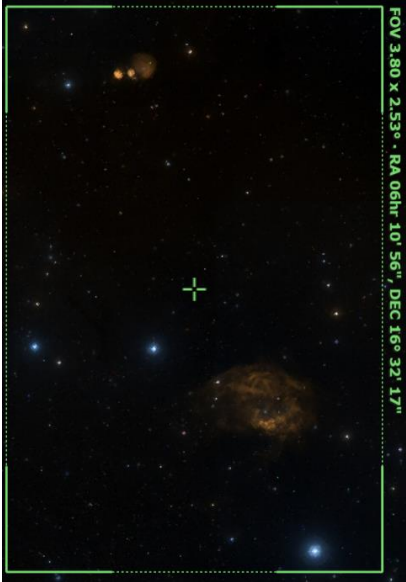
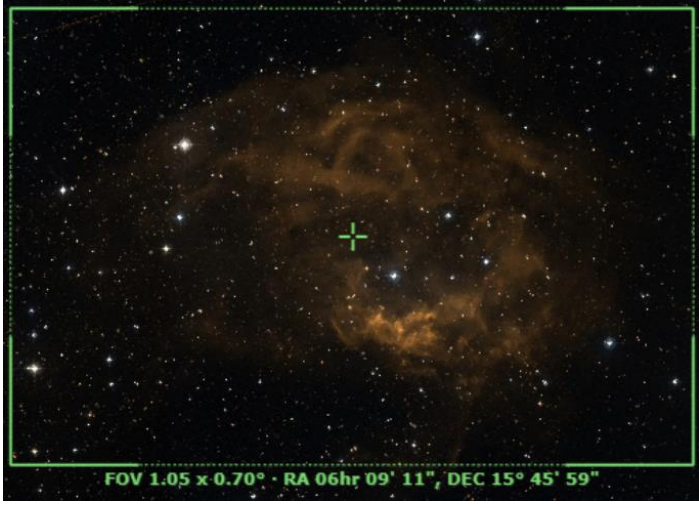

Prospective Imaging Objects – December 12 2023

<p>LDN-1622 (Region 03) Config: C11-HD HS ZWO6200MC</p> <p>Type: Bright and Dark Nebula Peak: Coordinates: 05hr 54' 51" 01° 47' 10"</p> <p>Close Star: SAO-112740(Bellatrix) Catalog Objects: LDN-1622</p> <p>Imaging Window: 10:39 – 03:14 Transit: 12:57</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="text-align: center;">FOV 3.80 x 2.54° · RA 05hr 54' 51", DEC 01° 47' 10"</p>
<p>LDN 1622 Config: C11HD ZWO6200MC </p> <p>Type: Dark Nebula Peak: Constellation: Orion Camera Rotation - 90° Frame 01 RA: 05hr 56' 28"DEC: 01° 58' 32" Frame 02 RA: 05hr 54' 08"DEC: 01° 58' 35" Close Star: SAO-132346 (Alnilam) Catalog Objects: LDN 1622</p> <p>Imaging Window: 10:39 – 03:14 Transit: 12:57</p>	<p style="text-align: center;">C-11 HD: Focal Reducer Composite!</p>  <p style="text-align: center;">FOV 1.04 x 1.28° · RA 05hr 55' 18", DEC 01° 58' 34"</p>
<p>LDN-1622 Config: C11HD FR ZWO6200MC </p> <p>Type: Bright and Dark Nebula Peak: Constellation: Orion Coordinates: 05hr 54' 52" 01° 49' 51"</p> <p>Close Star: SAO-112740(Bellatrix) Catalog Objects: LDN-1622</p> <p>Imaging Window: 10:39 – 03:14 Transit: 12:57</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p style="text-align: center;">FOV 1.04 x 0.70° · RA 05hr 54' 52", DEC 01° 49' 51"</p>


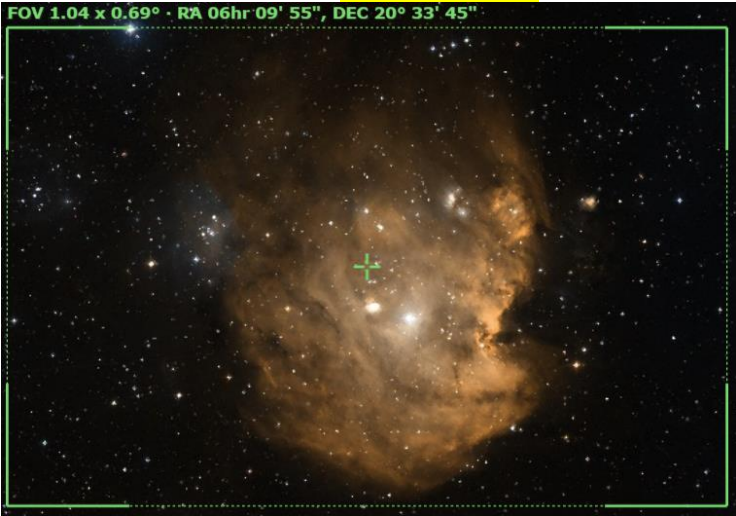

Prospective Imaging Objects – December 12 2023

<p>LDN 1622 Config: C11HD ZWO6200MC </p> <p>Type: Dark Nebula Peak: Constellation: Orion Coordinates: 05hr 54' 55" 01° 49' 49"</p> <p>Close Star: SAO-132346 (Anilam) Catalog Objects: LDN 1622</p> <p>Imaging Window: 10:39 – 03:14 Transit: 12:57</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Angel Nebula (NGC 2170) Config: C11-HD FR ZWO6200MC </p> <p>Type: Bright and Dark Nebula Peak: Constellation: Monoceros Coordinates: 06hr 08' 26" -06° 25' 24"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: NGC 2170</p> <p>Imaging Window: 11:40 – 02:38 Transit: 01:09</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> <p style="text-align: center;">FOV 1.04 x 0.70° - RA 06hr 08' 26", DEC -06° 25' 24"</p> 
<p>Angel Nebula (NGC 2170) Config: C11HD ZWO6200MC </p> <p>Type: Bright and Dark Nebula Peak: Constellation: Monoceros Coordinates: 06hr 08' 23" -06° 19' 23"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: NGC 2170</p> <p>Imaging Window: 11:40 – 02:38 Transit: 01:09</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;"> Angel Nebula (NGC-2170) Constellation: Monoceros RA: 06hr 08m 23s DEC: -06deg 19' 23" Size: 41.2 x 27.1 arcmin Orientation: 0 deg E of N (Pixel scale = 0.446 arcseconds/px @ 2000mm) James Webb Location: Mountain View (2020-10-11), Chandler/2020-10-12, AZ Config: C11 HD ZWO6200MC ZWO6200MC Exposure Info: 475min/30min (Gain: 3200 / 0.9sec / 180) </p>



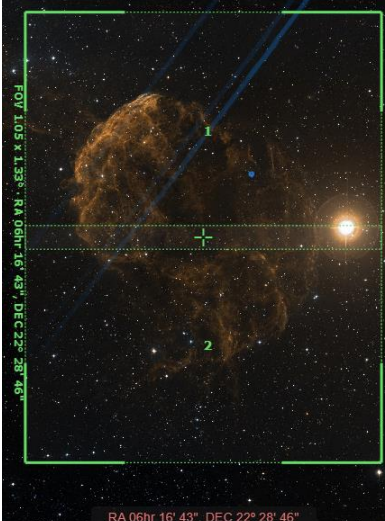
Prospective Imaging Objects – December 12 2023

<p>IC-2162 & SH 2-261 Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 06hr 10' 56" 16° 32' 17" Angle: 90° East</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: IC-2162 Sh 2-261</p> <p>Imaging Window: 10:07 – 01:10 Transit: 04:14 72°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 
<p>Lower's Nebula (Sh 2-261) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 06hr 09' 11" 15° 45' 59"</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: Sh 2-261</p> <p>Imaging Window: 10:07 – 01:10 Transit: 04:14 72°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>Lower's Nebula (Sh 2-261) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 06hr 08' 59" 15° 46' 39"</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: Sh 2-261</p> <p>Imaging Window: 10:07 – 01:10 Transit: 04:14 72°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December 12 2023

<p>M-35, NGC-2158 Config: C11-HD FR ZWO6200MC </p> <p>Type: Open Cluster Pair Constellation: Gemini Coordinates: 06hr 08' 39" 24° 14' 48"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: M-35/NGC-2168, NGC-2158</p> <p>Imaging Window: 09:48 – 04:34 Transit: 01:11 81°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>Monkey Head (NGC-2174) Config: C11-HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 06hr 09' 50" 20° 29' 50"</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: NGC 2174/Sh 2-252</p> <p>Imaging Window: 09:56 – 04:27 Transit: 01:11 77°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> <p style="text-align: center;">FOV 1.04 x 0.69° · RA 06hr 09' 55", DEC 20° 33' 45"</p> 
<p>Monkey Head (NGC 2174) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 06hr 09' 50" 20° 29' 50"</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: NGC 2174/Sh 2-252</p> <p>Imaging Window: 09:56 – 04:27 Transit: 01:11 77°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;"> Monkey Head Nebula (NGC-2174) Constellation: Orion RA = 06h 09m 49.11s, DEC = +20deg 29' 50.10" Size = 11.1 x 6.9 arcmin Peak gain = 6.44e electrons/px F1-C-720mm Image Size: 2024 x 1312 Location: Chandler, AZ Config: C-11 HD (Astromaster) CLS-C-11 6000 S/N Exposure Info: 27 frames @ 30s, Gain: 3200, 100% Sat. 100% </p>




Prospective Imaging Objects – December 12 2023

<p>IC 2162 Config: C11HD ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Orion Coordinates: 06hr 12' 25" 17° 59' 26"</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: IC 2162</p> <p>Imaging Window: 10:06 – 01:15 Transit: 04:24 75°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Bright Nebula IC-2162 Constellation: Orion RA=06h 12m 25s, DEC=17° 59' 26" (Mag 9.9-12.0) Size=42.3 x 23.0 arcmin Peak scale=0.441 arcsec/pixel James Volder Date(s) 2020-10-21 Location: Chandler, AZ Config.: C-11 HD Amonik C11-CCD 0.91 12s Exposure Info: 120000/1000/1000/1000/1000/1000</p>
<p>Jellyfish Nebula (IC 443) Config: C11-HD HS ZWO6200MC</p> <p>Type: Supernova Remnant Peak: Constellation: Gemini Coordinates: 06hr 19' 56" 23° 06' 17"</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: IC 443</p> <p>Imaging Window: 09:59 – 04:38 Transit: 01:18 79°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">Jellyfish Nebula (IC-443) Constellation: Gemini RA=06h 19m 20s, DEC=+23° 06' 17" (Mag 3.1-18.0) Size=3.14 x 2.99 deg Orientation: 8deg E of N Pixel scale=2.28 arcsec/pixel FL=540mm James Volder Date(s) 2020-10-21 Location: Chandler, AZ Config.: C-11 HD HyperStar v4 Amonik C11-CCD 0.91 12s Exposure Info: 150000/1000/1000/1000/1000/1000</p>
<p>Jellyfish Nebula (IC 443) Config: C11-HD FR ZWO6200MC </p> <p>Type: Supernova Remnant Peak: Constellation: Gemini Coordinates: F1 RA=06:16:43 DEC=22:47:40 F2 RA=06:16:43 DEC=22:09:52</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: IC 443</p> <p>Imaging Window: 09:59 – 04:38 Transit: 01:18 79°</p>	<p style="text-align: center;">C11-HD: Focal Reducer Composite 2!</p>  <p style="font-size: small;">FOV: 105 x 133" RA: 06h 16' 43" DEC: 22° 28' 46" RA 06hr 16' 43" DEC 22° 28' 46"</p>




Prospective Imaging Objects – December 12 2023

<p>Jellyfish Nebula (IC 443) Config: C11 LF ZWO6200MC </p> <p>Type: Supernova Remnant Peak: Constellation: Gemini Coordinates: 06hr 16' 51" 22° 36' 34"</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: IC 443</p> <p>Imaging Window: 09:59 – 04:38 Transit: 01:18 79°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small;">Jellyfish nebula (IC 443) Constellation: Gemini</p> <p style="font-size: x-small; text-align: right;">Location: Canada, AZ Config: C11 System L1 Corrector OPT 160mm F8.5 OPT 2.5 Exposure Info: 100ms/Frame - Gain: 1200 Offset: 100</p>
<p>Sh 2-249 (IC-444) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Gemini Coordinates: 06hr 19' 15" 23° 24' 58"</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: Sh 2-249</p> <p>Imaging Window: 10:00 – 04:42 Transit: 01:21 80°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>IC-2165 Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Peak: Constellation: Canis Major Coordinates: 06hr 21' 43" -12° 59' 12"</p> <p>Close Star: Catalog Objects: IC-2165</p> <p>Imaging Window: *11:18 – 04:00 Transit: 01:24 44°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small; text-align: center;">FOV 0.73 x 0.48° · RA 06hr 21' 43", DEC -12° 59' 12" · 0.28"/px</p>


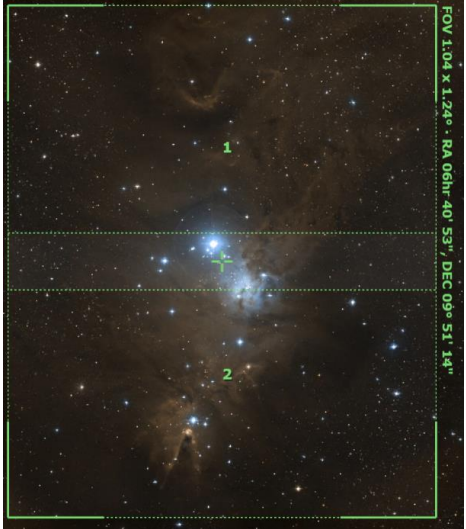
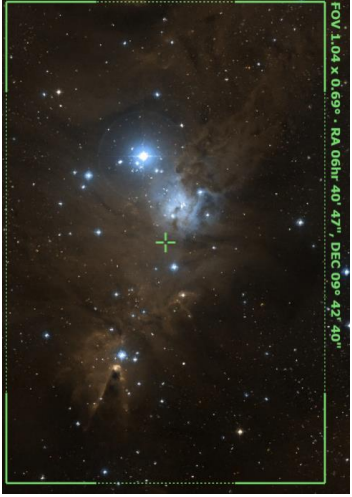
Prospective Imaging Objects – December 12 2023

<p>Rosette Nebula (NGC 2237) Config: C11-HD HS ZWO6200MC</p> <p>Type: Diffuse Nebula Constellation: Monoceros Coordinates: 06hr 31' 53.37" 04° 50' 45.29"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: NGC 2237 ,NGC-2244</p> <p>Imaging Window: 11:02 – 04:03 Transit: 01:33 62°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">Rosette Nebula (NGC 2237, 2240, 2241, 2239, 2246) C-11 Hyperstar 1600iso 1.5min James Taylor 2023-11-12 01:33</p>
<p>Rosette Nebula (NGC 2237) Config: C11-HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Monoceros Coordinates: 06hr 32' 01" 04° 59' 28"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: NGC 2237</p> <p>Imaging Window: 11:02 – 04:03 Transit: 01:33 62°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>Rosette Nebula (NGC 2237) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Monoceros Coordinates: 06hr 32' 02" 04° 58' 14"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: NGC 2237</p> <p>Imaging Window: 11:02 – 04:03 Transit: 01:33 62°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 



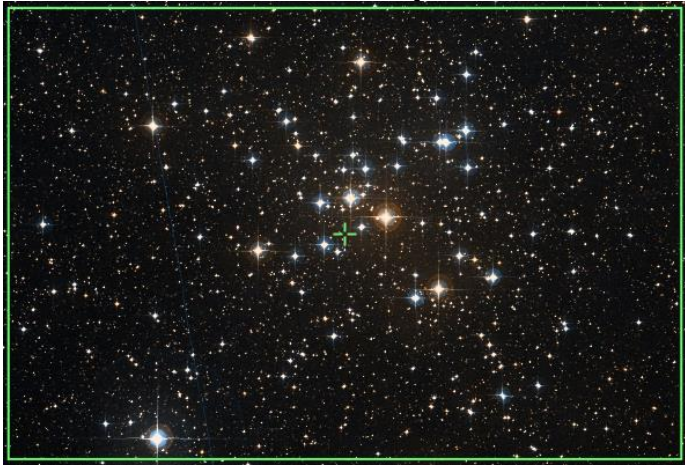
Prospective Imaging Objects – December 12 2023

<p>IC-2169 Config: C11 HS ZWO6200MC</p> <p>Type: Bright Nebula Peak: Constellation: Monoceros Coordinates: 06hr 36' 00" 10° 16' 17"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: IC 2169</p> <p>Imaging Window: 10:46 – 04:20 Transit: 01:33 67°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 
<p>IC 2169 Config: C11-HD FR ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Monoceros Coordinates: 06hr 31' 21" 09° 56' 20"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: IC 2169</p> <p>Imaging Window: 10:46 – 04:20 Transit: 01:33 67°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>IC 2169 Config: C11HD ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Monoceros Coordinates: 06hr 31' 36" 09° 58' 16"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: IC 2169</p> <p>Imaging Window: 10:46 – 04:20 Transit: 01:33 67°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December 12 2023

<p>Hubble's Variable Nebula (NGC 2261) Config: C11HD ZWO6200MC </p> <p>Type: Reflection Nebula Constellation: Monoceros Coordinates: 06hr 39' 12" 08° 45' 00"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: NGC 2261</p> <p>Imaging Window: 10:58 – 04:24 Transit: 01:41 65°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Christmas Tree & Cone Config: C11-HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula</p> <p>Coordinates: Pane 1: 06hr 40' 53", 10° 07' 47" Pane 2, 06hr 40' 53", 09° 34' 40"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: NGC 2264/Sh 2-273</p> <p>Imaging Window: 10:56 – 04:30 Transit: 01:43 67°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer Composite!</p> 
<p>Christmas Tree & Cone Config: C11-HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Monoceros Coordinates: 06hr 40' 47" 09° 42' 40" Angle: 90° East</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: NGC 2264/Sh 2-273</p> <p>Imaging Window: 10:56 – 04:30 Transit: 01:43 67°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 




Prospective Imaging Objects – December 12 2023

<p>Christmas Tree Cluster (NGC 2264) Config: C1 LF ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Monoceros Coordinates: 06hr 40' 58.74" 09° 53' 32.69"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: NGC 2264/Sh 2-273</p> <p>Imaging Window: 10:56 – 04:30 Transit: 01:43 67°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small;">NGC 2264: Christmas Tree Cluster</p>
<p>Cone Nebula-1 (NGC 2264) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Monoceros Coordinates: 06hr 41' 07" 09° 27' 52"</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: NGC 2264</p> <p>Imaging Window: 10:56 – 04:30 Transit: 01:43 67°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>M-41 (NGC 2287) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster Constellation: Canis Major Coordinates: 06hr 46' 09" 20° 47' 35"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: M-41/NGC 2287</p> <p>Imaging Window: *11:57 – 03:33 Transit: 01:48 36°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December 12 2023

<p>M-50 (NGC 2323) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster Constellation: Monoceros Coordinates: 07hr 02' 48" -08° 22' 33"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: M-50/NGC 2323</p> <p>Imaging Window: *11:29 – 04:34 Transit: 02:05 48°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Seagull Nebula (IC-2177) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Monoceros Coordinates: 07hr 06' 20" -11° 06' 56"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: IC-2177</p> <p>Imaging Window: *11:46 – 04:23 Transit: 02:07 46°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4 - 90° Rotation</p>  <p style="font-size: small;">Seagull Nebula (IC-2177, NGC-2327, NGC-2335, NGC-2343) <small>Constellation: Monoceros RA: 07h 06m 20s, DEC: -11deg 07' 56" Size: 20x14 arcmin Orientation: 90deg S of N Pixel scale: 1.27x arcsec/pixel (1x151um)</small></p> <p style="font-size: x-small; text-align: right;">James Webb (Data) 2021.01.05, 08, 11, 14, 17 Location: Chandler, AZ Config: C-11HD HyperStar V4 Optolong L-Extreme SBIG ZWO Equipment: 10" Transit/Star Guide, 3200, 508mm, 100"</p>
<p>Seagull Nebula (IC 2177) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Monoceros Coordinates: 07hr 04' 47" -10° 27' 49"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: IC 2177</p> <p>Imaging Window: *11:46 – 04:23 Transit: 02:07 46°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December 12 2023

<p>Hourglass Nebula (NGC-2346) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Peak: Constellation: Monoceros Coordinates: 07hr 09' 23" 00° 48' 22"</p> <p>Close Star: SAO-115756 (Procyon) Catalog Objects: NGC-2346</p> <p>Imaging Window: *11:07 – 05:12 Transit: 02:11 56°</p>	<p style="text-align: center;">C-11 HD: Primary Focus x2</p>  <p style="font-size: small;">Planetary Nebula NGC-2346 Constellation: Monoceros RA: 07h 09m 23s.000 Dec: 00d 48m 22s.000 Date: 2023-11-12 00:00:00.000 Filter: None Exposure: 0.25s Gain: 0 Offset: 0</p>
<p>Integral Sign Galaxy (UGC 3697) Config: C11HD FR ZWO6200MC </p> <p>Type: Galaxy Group Constellation: Camelopardalis Coordinates: 07hr 11' 40" 71° 56' 04"</p> <p>Close Star: SAO-40186 (Capella) Catalog Objects: UGC-3697, UGC-3714, UGC-3701</p> <p>Imaging Window: 11:15 – 05:11 Transit: 02:13 52°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>Integral Sign Galaxy (UGC 3697) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Constellation: Camelopardalis Coordinates: 07hr 11' 50" 71° 48' 14"</p> <p>Close Star: SAO-40186 (Capella) Catalog Objects: UGC-3697, UGC-3714</p> <p>Imaging Window: 11:15 – 05:11 Transit: 02:13 52°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 

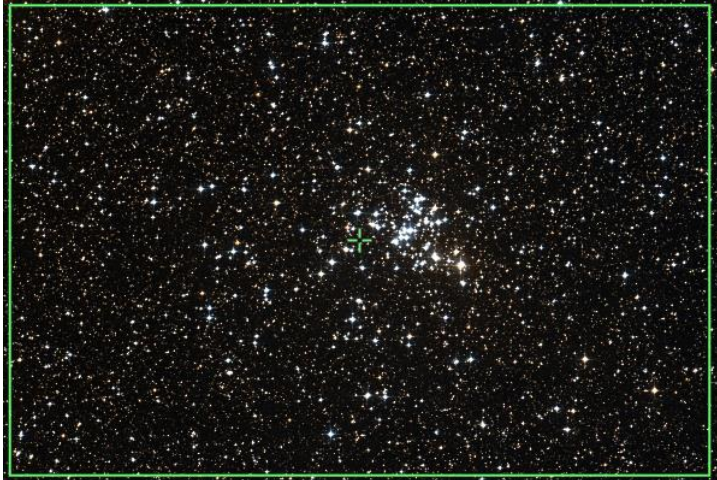


Prospective Imaging Objects – December 12 2023

<p>Eskimo Nebula (NGC-2392) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula</p> <p>Constellation: Gemini Coordinates: 07h 29' 11" 20° 54' 45"</p> <p>Close Star: SAO-79666 (Pollux) Catalog Objects: NGC-2392</p> <p>Imaging Window: 11:15 – 05:47 Transit: 02:31 70°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">NGC-2392 (Eskimo Nebula) James Yoder Date(s) 2020.12.09 Location: Chandler, AZ Constellation: Gemini Config: C-11 HD KPT Tread Ultra ZWO6200MC RA = 07h 29m 11.5s DEC = +20deg 54' 33.6" Size = 18.5 x 13.9 arcmin Orientation: 0.5deg E of N Pixel scale = 0.278 arcsec/pixel FL = 2800mm Exposure: 1s 14 Frames/2min Gain: 100 Offset: 50</p>
<p>M-47 (NGC-2422) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster</p> <p>Constellation: Puppis Coordinates: 07h 36' 36" -14° 32' 19"</p> <p>Close Star: SAO-79666 (Pollux) Catalog Objects: M-47/NGC-2422</p> <p>Imaging Window: *12:02 – 05:07 Transit: 02:38 42°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>NGC-2403 Config: C11HD ZWO6200MC </p> <p>Type: Barred Spiral Galaxy</p> <p>Constellation: Camelopardalis Coordinates: 07h 36' 51" 65° 36' 06"</p> <p>Close Star: SAO-79666 (Pollux) Catalog Objects: NGC-2403</p> <p>Imaging Window: 11:06 – 05:53 Transit: 02:38 58°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Galaxy NGC-2403 (Caldwell 7) James Yoder Date(s) 2020.12.09 Location: Chandler, AZ Constellation: Camelopardalis Config: C-11 HD KPT Tread Ultra ZWO6200MC RA = 07h 36m 51.1s DEC = +65deg 36' 06.1" Size = 18.5 x 13.9 arcmin Orientation: 0.5deg E of N Pixel scale = 0.278 arcsec/pixel FL = 2800mm Exposure: 1s 14 Frames/2min Gain: 100 Offset: 50</p>


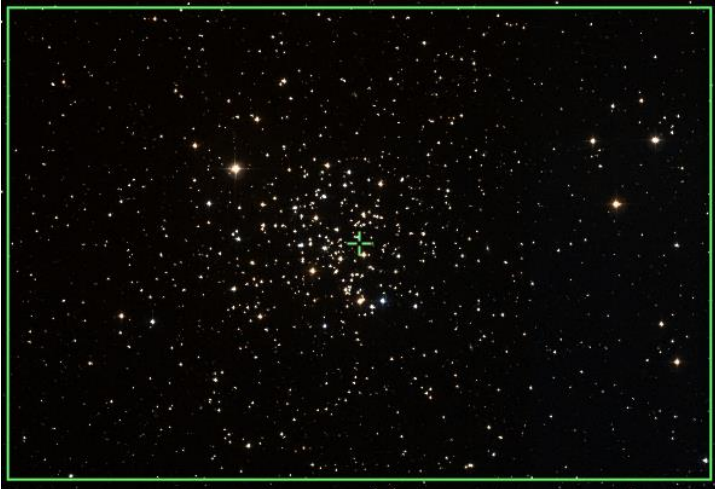

Prospective Imaging Objects – December 12 2023

<p>Intergalactic Wanderer (NGC-2419) Config: C11HD ZWO6200MC </p> <p>Type: Globular Cluster</p> <p>Constellation: Lynx Coordinates: 07h 38' 09" 38° 52' 57"</p> <p>Close Star: SAO-79666 (Pollux) Catalog Objects: NGC-2419</p> <p>Imaging Window: 10:56 – 05:53 Transit: 02:40 84°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="text-align: center;"><small>Intergalactic Wanderer (NGC-2419) © 2023 Starizona LLC. All rights reserved. This image is for personal use only. No part of this image may be reproduced without the written permission of Starizona LLC.</small></p>
<p>M-46 (NGC-2437) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster with PN</p> <p>Constellation: Puppis Coordinates: 07h 41' 45" -14° 46' 43"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: M-46/NGC-2437, NGC-2438</p> <p>Imaging Window: *12:13 – 05:12 Transit: 02:43 42°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="text-align: center;"><small>NGC-2438 © 2023 Starizona LLC. All rights reserved. This image is for personal use only. No part of this image may be reproduced without the written permission of Starizona LLC.</small></p>
<p>Bow-Tie Nebula (NGC-2440) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula</p> <p>Constellation: Puppis Coordinates: 07° 41' 55" -18° 12' 29"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: NGC-2440</p> <p>Imaging Window: *12:36 – 04:50 Transit: 02:44 38°</p>	<p style="text-align: center;">C-11 HD: Primary Focus x2</p>  <p style="text-align: center;"><small>FOV 0.73 x 0.49° • RA 07hr 41' 55", DEC -18° 12' 29"</small></p>




Prospective Imaging Objects – December 12 2023

<p>Butterfly Cluster (M-93, NGC-2447) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster</p> <p>Constellation: Puppis Coordinates: 07h 44' 46" -23° 51' 52"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: M-93/NGC-2447</p> <p>Imaging Window: *12:36 – 04:50 Transit: 02:46 33°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>M-48 (NGC-2548) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster</p> <p>Constellation: Hydra Coordinates: 08h 13' 46" -05° 46' 05"</p> <p>Close Star: SAO-115756 (Procyon) Catalog Objects: M-48/NGC-2548</p> <p>Imaging Window: *12:36 – 04:56 Transit: 03:15 51°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>NGC-2610 Config: C11-HD HS ZWO6200MC</p> <p>Type: Planetary Nebula</p> <p>Constellation: Hydra Coordinates: 08h 33' 23" -16° 08' 55"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: NGC-2610</p> <p>Imaging Window: *01:53 – 05:12 Transit: 03:35 41°</p>	<p style="text-align: center;">C-11 HD: Primary Focus x2</p> 




Prospective Imaging Objects – December 12 2023

<p>Beehive Cluster (NGC-2632) Config: C11-HD HS ZWO6200MC</p> <p>Type: Open Cluster</p> <p>Constellation: Cancer Coordinates: 08h 39' 59" 19° 39' 01"</p> <p>Close Star: SAO-115756 (Procyon) Catalog Objects: M-44/NGC-2632</p> <p>Imaging Window: 12:29 – 05:53 Transit: 03:42 76°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 
<p>M-67 (NGC-2682) Config: C11HD ZWO6200MC </p> <p>Type: Open Cluster</p> <p>Constellation: Cancer Coordinates: 08h 51' 18" 11° 48' 60"</p> <p>Close Star: SAO-115756 (Procyon) Catalog Objects: M-67/NGC-2682</p> <p>Imaging Window: 01:00 – 05:53 Transit: 03:53 68°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Helix Galaxy (NGC-2685) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy</p> <p>Constellation: Ursa Major Coordinates: 08h 55' 14" 58° 42' 24"</p> <p>Close Star: SAO-27876 (Merak) Catalog Objects: NGC-2685</p> <p>Imaging Window: 12:10 – 04:50 Transit: 01:10 65°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 


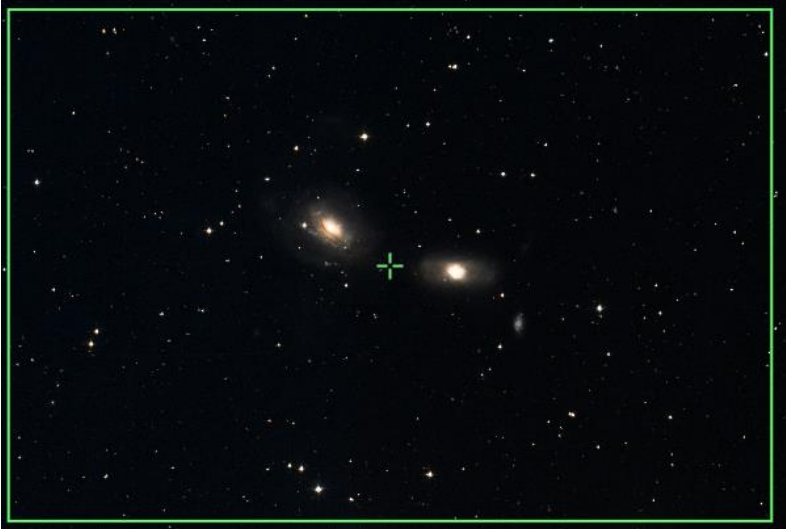

Prospective Imaging Objects – December 12 2023

<p>NGC-2903 Config: C11HD ZWO6200MC </p> <p>Type: Galaxy</p> <p>Constellation: Leo Coordinates: 09h 32' 08.949" 21° 30' 37.772"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: NGC-2903</p> <p>Imaging Window: 01:16 – 05:53 Transit: 04:33 78°</p>	<p>C-11 HD: Primary Focus</p>  <p><small>NGC-2903 Barred Spiral Galaxy in Leo</small></p> <p><small>James Yoder 2017.02.24</small></p>
<p>Bode's Cigar (M81 & M82) Config: C11-HD HS ZWO6200MC</p> <p>Type: Galaxy Pair Peak:</p> <p>Constellation: Ursa Major Coordinates: 09hr 54' 02" 68° 53' 32"</p> <p>Close Star: SAO-15384 Catalog Objects: M-81 & M-82</p> <p>Imaging Window: 01:43 – 05:53 Transit: 04:57 54°</p>	<p>C-11 HD: HyperStar v4</p>  <p><small>Cigar galaxy (M-82), Bode's galaxy (M-81), NGC-2976</small></p> <p><small>James Yoder Date: 2020.12.01, 2020.12.01 Location: Chandler, AZ Config: C-11HD HyperStar V4 LPS-S2, C13.6-CC OHT12dc Exposure Info: 90frames@9sec, 240sec@18sec Gain: 5200 Offset: 180 RA = 09h 54m 43.89s, DEC = +68deg 53' 03.72" Size = 3.14 x 2.89 deg Orientation: 3.6 deg E of N Pixel scale = 2.28 arcsec/pixel FL=0.46mm</small></p>
<p>Bode's Cigar (M81 & M82) Config: C11-HD HS ZWO6200MC</p> <p>Type: Galaxy Pair Constellation: Ursa Major Coordinates: RA: 09hr 55' 40" DEC: 69° 18' 39" 90° Rotation</p> <p>Close Star: SAO-15384 Catalog Objects: M-81 & M-82</p> <p>Imaging Window: 01:43 – 05:53 Transit: 04:57 54°</p>	<p>C-11 HD: Focal Reducer</p>  <p><small>FOV 1.04 x 0.69° - RA 09hr 55' 40", DEC 69° 18' 39" - 0.59"/px</small></p>



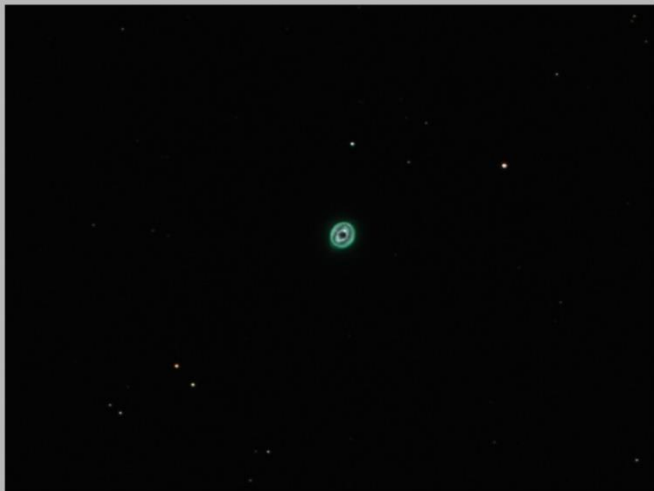
Prospective Imaging Objects – December 12 2023

<p>Bode's Nebula (M-81) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Constellation: Ursa Major Coordinates: 09h 55' 24.184" 69° 05' 18.969"</p> <p>Close Star: SAO-15384 Catalog Objects: M-81/NGC-3031</p> <p>Imaging Window: 01:40 – 05:53 Transit: 04:57 54°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Cigar Galaxy (M-82) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy</p> <p>Constellation: Ursa Major Coordinates: 09h 55' 57.451" 69° 42' 37.646"</p> <p>Close Star: SAO-15384 Catalog Objects: M-82/NGC-3034</p> <p>Imaging Window: 01:43 – 05:53 Transit: 04:57 54°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Spindle Galaxy (NGC-3115) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy</p> <p>Constellation: Sextans Coordinates: 10h 05' 21" -07° 47' 09"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: NGC-3115</p> <p>Imaging Window: *02:32 – 05:53 Transit: 05:06 49°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December 12 2023

<p>Powder keg Galaxy (UGC-5470) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy</p> <p>Constellation: Leo Coordinates: 10h 08' 27" 12° 19' 49"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: UGC-5470</p> <p>Imaging Window: 02:15 – 05:53 Transit: 05:10 69°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>NGC-3166 & NGC-3169 Config: C11HD ZWO6200MC </p> <p>Type: Galaxy pair</p> <p>Constellation: Sextans Coordinates: 10h 14' 01" 03° 25' 51"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: NGC-3166, NGC-3169</p> <p>Imaging Window: 02:51 – 05:53 Transit: 05:15 60°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Hickson 44 (NGC-3190, 3189.) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Group</p> <p>Constellation: Leo Coordinates: 10h 17' 57" 21° 49' 11"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: NGC-3189, 3190, 3185, 3193, 3187, PGC-2806871</p> <p>Imaging Window: 02:01 – 05:53 Transit: 05:19 79°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p><small>Hickson-44 Galaxy Cluster (Amp-316) © 2003-2004, Starizona Starizona Optics, Inc. 11000 E. 1st Ave., Suite 101, Scottsdale, AZ 85256 Phone: 480-344-2500 www.starizona.com</small></p> <p><small>Starizona Optics, Inc. 11000 E. 1st Ave., Suite 101, Scottsdale, AZ 85256 Phone: 480-344-2500 www.starizona.com</small></p>



Prospective Imaging Objects – December 12 2023

<p>NGC-3184 Config: C11HD ZWO6200MC </p> <p>Type: Face-on Spiral Galaxy</p> <p>Constellation: Ursa Major Coordinates: 10h 18' 17" 41° 25' 24"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: NGC-3184</p> <p>Imaging Window: 01:33 – 05:53 Transit: 05:19 82°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small; text-align: center;">Barred Spiral Galaxy NGC-3184 Copyright © 2023 James Van Der Vliet All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the publisher.</p>
<p>NGC-3227 & NGC-3226 Config: C11HD ZWO6200MC </p> <p>Type: Interacting Galaxies</p> <p>Constellation: Leo Coordinates: 10h 23' 29" 19° 53' 07"</p> <p>Close Star: SAO-60178 (Castor) Catalog Objects: NGC-3227, NGC-3226</p> <p>Imaging Window: 02:11 – 05:53 Transit: 05:25 76°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Ghost of Jupiter (NGC-3242) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula</p> <p>Constellation: Hydra Coordinates: 10h 24' 46" -18° 38' 31"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: NGC-3242</p> <p>Imaging Window: *03:16 – 05:53 Transit: 05:26 38°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small;">NGC-3242 (Ghost of Jupiter) Constellation: Hydra James Van Der Vliet (Duxis) 2023-12-09-10 Location: Chandler, AZ Config: C-11 HD OPT Triad Ultra ZWO6200MC Exposure Info: 36 Frames@2min Gain: 100 Offset: 50 RA = 10h 24m 44.7s DEC = -18deg 38' 31.4" Size = 18.5 x 13.9 arcmin Orientation: -41 deg E of N Pixel scale = 0.279 arcsec/pixel FL = 2000mm</p>

Prospective Imaging Objects – December 12 2023

<p>Galaxy Group 2574 Config: C11-HD HS ZWO6200MC</p> <p>Type: Galaxy Group</p> <p>Constellation: Leo Coordinates: 10h 28' 40" 68° 26' 14"</p> <p>Close Star: SAO-27876 (Merak) Catalog Objects: IC-2574</p> <p>Imaging Window: 02:09 – 05:53 Transit: 05:30 55°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="text-align: center;">FOV 3.81 x 2.54° · RA 10hr 12' 10", DEC 69° 02' 51"</p>
<p>Coddington's Nebula (IC-2574) Config: C11HD ZWO6200MC </p> <p>Type: Barred Spiral Galaxy</p> <p>Constellation: Leo Coordinates: 10h 28' 40" 68° 26' 14"</p> <p>Close Star: SAO-27876 (Merak) Catalog Objects: IC-2574</p> <p>Imaging Window: 02:09 – 05:53 Transit: 05:30 55°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="text-align: center;">Coddington Nebula (IC-2574) <small>James Yoder Dated: 2022.04.01 - 2020.04.08 Location: Chandler, AZ Constellation: Ursa Major Config: C-11 HD Bader Skyflow QHY128c Exposure Info: 200fms 4min Gain: 3200 Offset: 180 RA = 10h 28m 41.9s DEC = -08deg 24' 48.2" Size = 32.3 x 23.4 arcmin Orientation: 0.02deg E of N Pixel scale = 0.452 arcsec/pixel FL = 2724mm.</small></p>
<p>Leo Galaxy Group (M-96, M95 et al.) Config: C11-HD HS ZWO6200MC</p> <p>Type: Galaxy Grouping</p> <p>Constellation: Leo Coordinates: 10h 47' 23" 12° 23' 59"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: M-96, M95, NGC3389, NGC3384, M105</p> <p>Imaging Window: 02:55 – 05:53 Transit: 05:53 68°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="text-align: center;">Galaxy Cluster in Leo <small>James Yoder. 2018.04.17.</small></p>

Prospective Imaging Objects – December 12 2023

<p>M-95, M-96 (NGC-3351, 3368) Config: C11-HD FR ZWO6200MC </p> <p>Type: Galaxy Pair</p> <p>Constellation: Leo Coordinates: 10h 45' 20" 11° 44' 30"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: M-95, M-96</p> <p>Imaging Window: 02:55 – 05:53 Transit: 05:53 68°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p style="font-size: small; text-align: center;">Galaxy pair M-95(NGC-3351) & M-96(NGC-3368) © Constellation: Leo (the Lion) (RA: 10h 45m 19.9s DEC: -11deg 44' 27.7") Size: 19.2 x 40 arcmin (Field width: ~0.57 arcmin/pixel) James Yoder 2023-09-27 Location: Mountain Grande Trailhead Config: C-11 HD (Focal Reducer) Exposure Info: 210sec/Frame, Gain: 3200, Offset: 192</p>
<p>Leo Trio 2 (NGC-3379, 3384, 3389) Config: C11HD ZWO6200MC </p> <p>Type: Trio of Galaxies</p> <p>Constellation: Leo Coordinates: 10h 48' 07.227" 12° 33' 52.943"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: M-105/NGC3379, NGC-3384, NGC-3389</p> <p>Imaging Window: 02:54 – 05:53 Transit: 05:49 69°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Trio of Galaxies NGC 3389 NGC 3384 NGC 3379 (M105) James Yoder 2015-03-22</p>

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Page

Prospective Imaging Objects – December 12 2023

Imaging Summary December 12, 2023

Astronomical Dusk = 06:49

Astronomical Dawn = 05:53

HyperStar: Nebula

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
HyperStar	Nebula	Nebula	NGC-7822	06:49 – 10:30	07:05	02	Cepheus: Nebula CED-214
HyperStar	Nebula	Nebula	NGC-7822	06:49 – 10:30	07:05	02	Cepheus: Nebula CED-214
HyperStar	Nebula	Nebula	SH2-185	06:49 – 11:43	07:59	10	Cassiopeia: Bright Nebula
HyperStar	Nebula	Neb, OC	NGC-457	06:49 – 12:09	08:22	11	Cassiopeia: NGC-457 & Dolphin Nebula
HyperStar	Nebula	Nebula	IC-1848, 1805	06:49 – 01:18	09:35	16	Comp4! Cassiopeia: Heart and Soul Nebula
HyperStar	Nebula	Nebula	IC-1805	06:49 – 01:18	09:35	16	Cassiopeia: Heart Nebula
HyperStar	Nebula	Nebula	IC-1848	06:49 – 01:38	09:54	19	Cassiopeia: Soul Nebula
HyperStar	Nebula	Nebula	NGC-1499	07:24 – 02:47	11:05	22	Perseus: California Nebula
HyperStar	Nebula	Nebula	IC-405	08:40 – 03:57	12:19	26	Auriga: Flaming Star Nebula
HyperStar	Nebula	Nebula	M-42	11:01 – 02:14	12:37	30	Orion: Comp6! Orion Complex
HyperStar	Nebula	Nebula	M-42	11:01 – 02:14	12:37	30	Orion: Orion Nebula
HyperStar	Nebula	Nebula	SH2-240	09:12 – 04:10	12:41	32	Orion: Comp2! & Rotation90 Simeis-147
HyperStar	Nebula	Nebula	SH2-240	09:12 – 04:10	12:41	32	Orion: Simeis-147
HyperStar	Nebula	Nebula	NGC-2024, B33	10:48 – 02:38	12:43	33	Orion: Flame and Horsehead Nebula
HyperStar	Nebula	Nebula	LDN-1622	10:39 – 03:14	12:57	36	Orion: Comp2! LDN-1622 Complex
HyperStar	Nebula	Nebula	LDN-1622 R1	10:39 – 03:14	12:57	36	Orion: LDN-1622 Region 01
HyperStar	Nebula	Nebula	LDN-1622 R2	10:39 – 03:14	12:57	36	Orion: LDN-1622 Region 02
HyperStar	Nebula	Nebula	LDN-1622 R3	10:39 – 03:14	12:57	37	Orion: LDN-1622 Region 03
HyperStar	Nebula	Nebula	IC-2162, SH2-261	10:07 – 01:10	04:14	39	Orion: Rot90 Orion: Nebula
HyperStar	Nebula	Nebula	IC-443	09:59 – 04:38	01:18	41	Gemini: Jellyfish Nebula
HyperStar	Nebula	Nebula	NGC-2237	11:02 – 04:03	01:33	43	Monoceros: Rosette Nebula
HyperStar	Nebula	Nebula	IC-2169	10:46 – 04:20	01:33	44	Monoceros: Nebula Complex
HyperStar	Nebula	Nebula	IC-2177	*11:46-04:23	02:07	47	Rot90 Monoceros: Seagull Nebula
HyperStar	Nebula	Nebula					

Prospective Imaging Objects – December 12 2023

Imaging Summary December 12, 2023

Astronomical Dusk = 06:49

Astronomical Dawn = 05:53

HyperStar: Broad Spectrum

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
HyperStar	Broad Spectrum	Galaxies	NGC-147	06:49 – 11:26	07:36	04	Cassiopeia: Galaxy Pair NGC-147 & NGC-185
HyperStar	Broad Spectrum	Galaxy	M-31	06:49 – 11:32	07:46	06	Andromeda: The Great Andromeda Galaxy
HyperStar	Broad Spectrum	Galaxy	M-31	06:49 – 11:32	07:46	07	Rotation: Andromeda: Andromeda Galaxy
HyperStar	Broad Spectrum	Gal & GC	NGC-288, 253	*06:49-09:49	07:50	08	Sculptor: Globular and Galaxy
HyperStar	Broad Spectrum	Galaxy	M-33	06:49 – 12:10	08:37	13	Triangulum: Triangulum Galaxy
HyperStar	Broad Spectrum	OC	NGC-869, 884	06:49 – 01:13	09:25	15	Perseus: Hand chi Persei Open Cluster Pair
HyperStar	Broad Spectrum	Refl Neb	M-45	07:27 – 02:12	10:49	21	Taurus: Pleiades Open Cluster
HyperStar	Broad Spectrum	OC	C-41	08:25 – 02:34	11:29	23	Taurus: Hyades Open Cluster
HyperStar	Broad Spectrum	DN	IC-2118	*09:22-03:11	12:07	24	Eridanus: Witch Head Nebula
HyperStar	Broad Spectrum	BN	NGC-1788	10:19 – 01:59	12:09	25	Orion: Foxface Nebula
HyperStar	Broad Spectrum	OC	NGC-2632	12:29 – 05:53	03:42	53	Cancer: Beehive Cluster
HyperStar	Broad Spectrum	Galaxies	M-81 & M-82	01:43 – 05:53	04:57	54	Ursa Major: Galaxy Pair M-81 & M-82
HyperStar	Broad Spectrum	Galaxies	IC-2574	02:09- - 05:53	05:30	58	Leo: Galaxy Group 2574
HyperStar	Broad Spectrum	Galaxies	M-96, 95 Et El	02:55 – 05:53	05:53	58	Leo: Leo Galaxy Group

Prospective Imaging Objects – December 12 2023

Imaging Summary December 12, 2023

Astronomical Dusk = 06:49

Astronomical Dawn = 05:53

Focal Reducer: Nebula

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Focal Reducer	Nebula	Nebula	NGC-7822	06:49 – 10:30	07:05	03	Cepheus: Bright Nebula CED-214
Focal Reducer	Nebula	Nebula	NGC-246, 255	*06:49-10:34	07:50	07	Cetus: Planetary Nebula and 2 Galaxies
Focal Reducer	Nebula	Nebula	NGC-281	06:49 – 04:28	07:50	09	Cassiopeia: Packman Nebula
Focal Reducer	Nebula	Nebula	IC-1795	06:49 – 01:10	09:28	16	Cassiopeia: Fish Head Nebula
Focal Reducer	Nebula	Nebula	IC-1805	05:53 – 01:18	09:35	17	Cassiopeia: Heart Nebula RIO
Focal Reducer	Nebula	Nebula	IC-405	08:40 – 03:57	12:19	26	Auriga: Flaming Star Nebula
Focal Reducer	Nebula	Nebula	IC-410	08:47 – 04:02	12:25	27	Auriga: Tadpoles
Focal Reducer	Nebula	Nebula	NGC1055,1931	08:51 – 04:09	12:30	28	Comp2! Rot90° Auriga: The Spider and The Fly
Focal Reducer	Nebula	Nebula	NGC-1977	10:57 – 02:18	12:37	31	Orion: Running Man Nebula
Focal Reducer	Nebula	Nebula	NGC-2170	11:40 – 02:38	01:09	38	Monoceros: Angle Nebula
Focal Reducer	Nebula	Nebula	SH 2-261	10:07 – 01:10	04:14	39	Orion: Lower's Nebula
Focal Reducer	Nebula	Nebula	NGC-2174	09:56 – 04:27	01:11	40	Orion: Monkey Head Nebula
Focal Reducer	Nebula	Nebula	IC-443	09:59 – 04:38	01:18	41	Compsite2! Gemini: Jellyfish Nebula
Focal Reducer	Nebula	Nebula	NGC-2237	11:02 – 04:03	01:33	43	Monoceros: Rosette Nebula ROI
Focal Reducer	Nebula	Nebula	IC-2169	10:46 – 04:20	01:33	44	Monoceros: Blue Nebula IC-2169
Focal Reducer	Nebula	Nebula	NGC-2264	10:56 – 04:30	01:43	45	Composite2! Monoceros: Xmas tree & Cone Neb
Focal Reducer	Nebula	Nebula	NGC-2264	10:56 – 04:30	01:43	45	Rot90° Monoceros: Xmas tree & Cone Neb

Prospective Imaging Objects – December 12 2023

Imaging Summary December 12, 2023

Astronomical Dusk = 06:49

Astronomical Dawn = 05:53

Focal Reducer: Broad Spectrum

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Focal Reducer	Broad Spectrum	Galaxies	NGC-147, 185	06:49 – 11:26	07:36	05	Composite 2! Cassiopeia: Galaxy Pair
Focal Reducer	Broad Spectrum	Open Cl	NGC-188	*06:49-04:28	07:50	09	Cepheus: Open Cluster
Focal Reducer	Broad Spectrum	Galaxy	M-33	06:49 – 12:10	08:37	13	Rot90° Triangulum: Triangulum Galaxy
Focal Reducer	Broad Spectrum	Galaxies	M-77, NGC-1055	07:34 – 11:55	09:44	17	Cetus: Galaxy Pair
Focal Reducer	Broad Spectrum	DN/RN	NGC-1788	10:19 - 01:59	12:09	25	Orion: Foxface Nebula
Focal Reducer	Nebula	Nebula	M-78	10:40 – 02:58	12:49	34	Comp2! Orion: Dark Nebula Region
Focal Reducer	Nebula	Nebula	M-78	10:40 – 02:58	12:49	35	Orion: Dark Nebula Region
Focal Reducer	Broad Spectrum	DN	LDN-1622	10:39 – 03:14	12:57	37	Comp2! Rot90° Orion: Dark Nebula Region
Focal Reducer	Broad Spectrum	DN	LDN-1622	10:39 – 03:14	12:57	37	Orion: Dark Nebula Region
Focal Reducer	Broad Spectrum	OC	M-35, NGC-2158	09:48 – 04:34	01:11	40	Gemini: Open Cluster Pair
Focal Reducer	Broad Spectrum	Galaxies	UGC-3697	11:15 – 05:11	02:13	48	Camelopardalis: Integral Sign Galaxy
Focal Reducer	Broad Spectrum	Galaxies	M-81 & M-82	01:43 – 05:53	04:57	54	Rot90° Ursa Major: Galaxy Pair Bode's Cigar
Focal Reducer	Broad Spectrum	Galsxies	M-95 & M-96	02:55 – 05:53	05:53	59	Leo: Galaxy Pair

Prospective Imaging Objects – December 12 2023

Imaging Summary December 12, 2023

Astronomical Dusk = 06:49

Astronomical Dawn = 05:53

Primary Focus: Nebula

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Nebula	Nebula	NGC-7822	06:49 – 10:30	07:05	03	Cepheus: CED-214
Primary Focus	Nebula	PN	NGC-40	06:49 – 10:08	07:16	04	Cepheus: Bow-Tie Nebula
Primary Focus	Nebula	PN	NGC-246	*06:49-10:34	07:50	07	Cetus: Skull Nebula
Primary Focus	Nebula	Nebula	IC-59	06:49 – 11:43	07:59	10	Cassiopeia: Gamma Cassiopeiae Nebula
Primary Focus	Nebula	Nebula	SH2-188	06:49 – 12:20	08:33	12	Cassiopeia: Firefox Nebula
Primary Focus	Nebula	PN	M-76	06:49 – 12:35	08:45	14	Perseus: Little Dumbbell Nebula
Primary Focus	Nebula	Nebula	IC-1805	06:49 – 01:18	09:35	17	Cassiopeia: Heart Nebula Core
Primary Focus	Nebula	Nebula	IC-1848	06:49 – 01:38	09:54	19	Cassiopeia: Soul Nebula Core
Primary Focus	Nebula	Nebula	NGC-1333	08:43 – 12:30	10:36	20	Perseus: Bright Nebula
Primary Focus	Nebula	Nebula	NGC-1360	*08:43-12:24	10:36	20	Fornax: Robins Egg Nebula
Primary Focus	Nebula	Nebula	IC-348	07:11 – 02:23	10:47	20	Perseus: Nebula
Primary Focus	Nebula	Nebula	NGC-1501	07:26 – 02:53	11:09	22	Camelopardalis: Oyster Nebula
Primary Focus	Nebula	Nebula	NGC-1514	07:38 – 02:45	11:11	22	Taurus: Crystal Ball Nebula
Primary Focus	Nebula	Nebula	NGC-1535	*09:05-01:53	11:16	23	Eridanus: Cleopatra's Eye
Primary Focus	Nebula	Nebula	NGC-1555	08:11 – 02:37	11:24	23	Taurus: Hind's Variable Nebula
Primary Focus	Nebula	Nebula	NGC-1579	07:52 – 03:12	11:32	24	Perseus: Trifid of the North
Primary Focus	Nebula	Nebula	IC-405	08:40 – 03:57	12:19	26	Auriga: Flaming Star Nebula Core
Primary Focus	Nebula	Nebula	IC-410	08:47 – 04:02	12:25	27	Auriga: Tadpoles
Primary Focus	Nebula	PN	IC-418	*09:44-03:05	12:29	28	Lepus: Spirograph Nebula
Primary Focus	Nebula	Nebula	IC-417	08:51 – 04:09	12:30	28	Auriga: The Spider
Primary Focus	Nebula	Nebula	NGC-1931	08:55 – 04:12	12:33	29	Auriga: The Fly
Primary Focus	Nebula	Nebula	M-1	09:18 – 03:55	12:36	29	Taurus: Crab Nebula
Primary Focus	Nebula	Nebula	M-42	11:01 – 02:14	12:37	31	Orion: The Orion Nebula
Primary Focus	Nebula	Nebula	NGC-2024	10:45 – 02:48	12:44	33	Orion: Flame Nebula

Prospective Imaging Objects – December 12 2023

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Nebula	Nebula	B-33	10:48 – 02:38	12:43	33	Orion: Horsehead Nebula B-33
Primary Focus	Nebula	Nebula	NGC-2022	10:00 – 03:29	12:44	34	Orion: Small Planetary Nebula
Primary Focus	Nebula	Nebula	NGC-2170	11:40 – 12:38	01:09	38	Monoceros: Angle Nebula
Primary Focus	Nebula	Nebula	SH 2-261	10:07 – 01:10	04:14	39	Orion: Lower's Nebula Core
Primary Focus	Nebula	Nebula	NGC-2174	09:56 – 04:27	01:11	40	Orion: Monkey Head Nebula Core
Primary Focus	Nebula	Nebula	IC-2162	10:06 – 01:15	04:24	41	Orion: Bright Nebula blots
Primary Focus	Nebula	Nebula	IC-443	09:59 – 04:38	01:18	42	Gemini: Jellyfish Nebula Core
Primary Focus	Nebula	Nebula	SH 2-249	10:00 – 04:42	01:21	42	Gemini: Diffuse Nebula IC-444
Primary Focus	Nebula	PN	IC-2165	*11:18-04:00	01:24	42	Canis Major: Small Planetary
Primary Focus	Nebula	DN	NGC-2237	11:02 – 04:03	01:33	43	Monoceros: Rosette Nebula Core
Primary Focus	Nebula	BN	IC-2169	10:46 – 04:20	01:33	44	Monoceros: Blue Nebula IC-2169
Primary Focus	Nebula	RN	NGC-2261	10:59 – 04:24	01:41	45	Monoceros: Hubble's Variable Nebula
Primary Focus	Nebula	Nebula	NGC-2264	10:56 – 04:30	01:43	46	Monoceros: Christmas Tree Cluster
Primary Focus	Nebula	Nebula	NGC-2264 R1	10:56 – 04:30	01:43	46	Monoceros: Cone Nebula
Primary Focus	Nebula	Nebula	IC-2177	*11:46-04:23	02:07	47	Monoceros: Seagull Nebula Head
Primary Focus	Nebula	Nebula	NGC-2346	*11:07-05:12	02:11	48	Monoceros: Hourglass Nebula
Primary Focus	Nebula	Nebula	NGC-2359	*11:40-04:56	02:20	49	Canis Major: Thor's Helmet
Primary Focus	Nebula	Nebula	NGC-2371	10:55 – 05:53	02:27	49	Gemini: Candy Wrapper Nebula
Primary Focus	Nebula	Nebula	Abell-21	11:37 – 05:28	02:31	49	Gemini: Medusa Nebula
Primary Focus	Nebula	Nebula	NGC-2392	11:15 – 05:47	02:31	50	Gemini: Eskimo Nebula
Primary Focus	Nebula	PN	M-46	*12:13-05:12	02:43	51	Puppis: Open Cluster with PN
Primary Focus	Nebula	Nebula	NGC-2440	*12:36-04:50	02:44	51	Puppis: Bow-Tie Nebula
Primary Focus	Nebula	PN	NGC-2610	*01:53-05:12	03:35	52	Hydra: Small PN
Primary Focus	Nebula	PN	NGC-3242	*03:16-05:53	05:26	57	Hydra: Ghost of Jupiter

Prospective Imaging Objects – December 12 2023

Imaging Summary December 12, 2023

Astronomical Dusk = 06:49

Astronomical Dawn = 05:53

Primary Focus: Broad Spectrum

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Broad Spectrum	OC	NGC-7789	06:49 – 10:49	07:00	02	Cassiopeia: Caroline's Rose
Primary Focus	Broad Spectrum	Galaxies	NGC 67-72 et. El.	06:49 – 10:54	07:21	04	Andromeda: Andromeda Galaxy Group
Primary Focus	Broad Spectrum	Galaxy	NGC-147	06:49 – 11:26	07:36	05	Cassiopeia: Dwarf Galaxy NGC-147
Primary Focus	Broad Spectrum	Galaxy	NGC-185	06:49 – 11:32	07:42	05	Cassiopeia: Dwarf Spheroidal Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-110	06:49 – 11:32	07:46	06	Andromeda: Elliptical Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-32	06:49 – 11:32	07:46	06	Andromeda: Andromeda Companion Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-247	*06:49-10:17	07:50	08	Cetus: Needle's Eye Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-253	*06:49-09:49	07:50	08	Sculptor: Sculptor Galaxy
Primary Focus	Broad Spectrum	Globular	NGC-288	*06:49-09:44	07:55	09	Sculptor: Med/Lrg Globular
Primary Focus	Broad Spectrum	Galaxy	IC-1613	06:49 – 10:26	08:07	10	Cetus: Irregular Dwarf Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-404	06:49 – 11:53	08:12	11	Andromeda: Mirachs Ghost
Primary Focus	Broad Spectrum	OC	NGC-457	06:49 – 12:09	08:22	11	Cassiopeia: Owl Cluster
Primary Focus	Broad Spectrum	Galaxies	Arp-133	06:49- 10:30	08:28	12	Cetus: Minkowski's Object
Primary Focus	Broad Spectrum	OC	M-103	06:49 – 12:20	08:36	12	Cassiopeia: Open Cluster NGC-581
Primary Focus	Broad Spectrum	Galaxy	M-33	06:49 – 12:10	08:37	13	Triangulum: Triangulum Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-74	06:49 – 11:43	08:39	14	Pisces: Med Face-on Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-772	06:49 – 12:14	09:02	14	Aries: Nautilus Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-891	06:49 – 01:12	09:25	15	Andromeda: Edge On Galaxy NGC-891
Primary Focus	Broad Spectrum	Galaxy	NGC-925	06:49 – 01:08	09:30	15	Triangulum: Face On Galaxy PGC-9332
Primary Focus	Broad Spectrum	Galaxy	NGC-1055	07:34 – 11:55	09:44	18	Cetus: Edge on Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-77	07:37 – 11:53	09:45	18	Cetus: Face On Galaxy NGC-1068
Primary Focus	Broad Spectrum	OC	M-34	06:49 – 01:32	09:45	18	Perseus: Open Cluster NGC-1039
Primary Focus	Broad Spectrum	Galaxies	Abell-426	06:49 – 02:08	10:22	19	Perseus: Perseus Galaxy Cluster

Prospective Imaging Objects – December 12 2023

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Broad Spectrum	Galaxy	IC-342	07:27 – 02:11	10:49	21	Camelopardalis: Face On Galaxy
Primary Focus	Broad Spectrum	OC	M-45	07:27 – 02:12	10:49	21	Taurus: Pleiades Core
Primary Focus	Broad Spectrum	DN	IC-2118	*09:22-03:11	12:07	24	Eridanus: Witch Head Nebula ROI
Primary Focus	Broad Spectrum	DN	NGC-1788	10:19 – 01:59	12:09	25	Orion: Foxface Nebula ROI
Primary Focus	Broad Spectrum	GC	M-79	*10:23-02:26	12:26	27	Lepus: Med Globular Cluster NGC-1904
Primary Focus	Broad Spectrum	OC	M-38	08:50 – 04:11	12:31	29	Auriga: starfish Cluster
Primary Focus	Broad Spectrum	OC	M-36	09:00 – 04:17	12:38	31	Auriga: Pinwheel Cluster NGC-1960
Primary Focus	Broad Spectrum	Galaxy	NGC-1961	09:28 – 04:00	12:44	34	Camelopardalis: Small Galaxy
Primary Focus	Broad Spectrum	DN, BN	M-78	10:40 – 02:58	12:49	35	Orion: Bright and Dark Nebula
Primary Focus	Broad Spectrum	OC	M-37	09:18 – 04:32	12:54	35	Auriga: Sale and Pepper Cluster
Primary Focus	Broad Spectrum	DN	LDN-1622	10:39 – 03:14	12:57	38	Orion: Dark Nebula & Bright Nebula
Primary Focus	Broad Spectrum	OC	M-41	*11:57-03:33	01:48	46	Canis Major: Open Cluster NGC-2287
Primary Focus	Broad Spectrum	OC	M-50	*11:29-04:34	02:05	47	Monoceros: Open Cluster NGC-2323
Primary Focus	Broad Spectrum	Galaxies	UGC-3697	11:15 – 05:11	02:13	48	Camelopardalis: Integral Sign Galaxy UGC-3697
Primary Focus	Broad Spectrum	OC	M-47	*12:02-05:07	02:38	50	Puppis: Open Cluster NGC-2422
Primary Focus	Broad Spectrum	Galaxy	NGC-2403	11:06 – 05:53	02:38	50	Camelopardalis: Barred Spiral Face on Galaxy
Primary Focus	Broad Spectrum	GC	NGC-2419	10:56 – 05:53	02:40	51	Lynx: Intergalactic Wanderer
Primary Focus	Broad Spectrum	OC	M-93	*12:36-04:50	02:46	52	Puppis: Butterfly Cluster NGC-2447
Primary Focus	Broad Spectrum	OC	M-48	*12:36-04:56	03:15	52	Hydra: Open Cluster NGC-2548
Primary Focus	Broad Spectrum	OC	M-67	01:00 – 05:53	03:53	53	Cancer: Open Cluster NGC-2682
Primary Focus	Broad Spectrum	Galaxy	NGC-2685	12:10 – 04:50	01:10	53	Ursa Major: Helix Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-2903	01:16 – 05:53	04:33	54	Leo: Med Face On Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-81	01:40 – 05:53	04:57	55	Ursa Major: Bode's Nebula
Primary Focus	Broad Spectrum	Galaxy	M-82	01:43 – 05:53	04:57	55	Ursa Major: Cigar Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-3115	*02:32-05:53	05:06	55	Sextans: Spindle Galaxy
Primary Focus	Broad Spectrum	Galaxy	UGC-5470	02:15 – 05:53	05:10	56	Leo: Powder keg Galaxy UGC-5470
Primary Focus	Broad Spectrum	Galaxies	NGC-3166, 3169	02:51 - 05:53	05:15	56	Sextans: Galaxy Pair
Primary Focus	Broad Spectrum	Galaxies	Hickson 44	02:10 – 05:53	05:19	56	Leo: Galsxy Group NGC-3190, 3189

Prospective Imaging Objects – December 12 2023

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Broad Spectrum	Galaxy	NGC-3184	01:33 – 05:53	05:19	57	Ursa Major: Med Face On Galaxy
Primary Focus	Broad Spectrum	Galaxies	NGC-3227, 3226	02:11 – 05:53	05:25	57	Leo: Interacting Galaxies
Primary Focus	Broad Spectrum	Galaxy	IC-2574	02:09 – 05:53	05:30	58	Leo: Coddington's Nebula
Primary Focus	Broad Spectrum	Galxies	NGC-3379 et. El.	02:54 – 05:53	05:49	59	Leo: Leo Trio 2 of galaxies

Prospective Imaging Objects – December 12 2023

Imaging Summary December 12, 2023

Astronomical Dusk = 06:49

Astronomical Dawn = 05:53

Primary Prospects

Plan	Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
	HypterStar	Broadband	OC	NGC-869, 884	06:49 – 01:13	09:25	15	Perseus: Hand chi Persei Double Cluster
	HyperStar	Nebula	Nebula	IC-1848	07:47 – 03:12	11:29	22	Comp4! Cassiopeia: Heart & Soul Nebulas
	HyperStar	Nebula	Nebula	NGC-1499	07:24 – 02:47	11:05	22	Perseus: California Nebula (Redo)
	HyperStar	Nebula	Nebula	M-42	11:01 – 02:14	12:37	30	Orion: The Orion Nebula
	HyperStar	Nebula	Nebula	SH2-240	09:12 – 04:10	12:41	32	Rot-Comp2 Taurus: Simeis 147
	HyperStar	Nebula	Nebula	LDN-1622	10:39 – 03:14	12:57	36	Comp2! LDN 1622 Complex
	HyperStar	Nebula	Nebula	IC-2162, SH2-261	10:07 – 01:10	04:14	39	Rotation Orion: Nebula Pair
	HyperStar	Nebula	Nebula	NGC-2237	11:02 – 04:03	01:33	43	Monoceros: Rosett Nebula (Redo)
	HyperStar	Nebula	Nebula	IC-2169	10:46 – 04:20	01:33	44	Monoceros: IC-2169 Nebula
	Focal Reducer	Nebula	Nebula	NGC-7822	06:49 – 10:30	07:05	03	Cepheus: Bright/Dark Nebula
	Focal Reducer	Nebula	Nebula	IC-1805	06:49 – 01:18	09:35	17	Cassiopeia: Heart Nebula Core (Redo)
	Focal Reducer	Nebula	Nebula	NGC-1788	10:19 – 01:59	12:09	25	Orion: Foxface Nebula
	Focal Reducer	Nebula	Nebula	NGC-1977	10:57 – 02:18	12:37	31	Orion: Running Man Nebula
	Focal Reducer	Nebula	Nebula	M-78	10:40 – 02:58	12:49	34	Comp2! Orion: Dark & Bright Nebula
	Focal Reducer	Nebula	Nebula	LDN-1622	10:39 – 03:14	12:57	37	Rot-Comp2 Orion: Dark Nebula
	Focal Reducer	Nebula	Nebula	SH 2-261	10:07 – 01:10	04:14	39	Orion: Lower's Nebula
	Focal Reducer	Nebula	Nebula	NGC-2174	09:56 – 04:27	01:11	40	Orion: Monkey Head Nebula
	Focal Reducer	Nebula	Nebula	IC-443	09:59 – 04:38	01:18	41	Comp2! Gemini: Jellyfish Nebula
	Focal Reducer	Nebula	Nebula	NGC-2237	11:02 – 04:03	01:33	43	Monoceros: Rosette Nebula Core
	Focal Reducer	Nebula	Nebula	IC-2169	10:46 – 04:20	01:33	44	Monoceros: Blue Nebula
	Focal Reducer	Nebula	Nebula	NGC-2264	10:56 – 04:30	01:43	45	Rot Monoceros: Xmas Tree & Cone
	Focal Reducer	Broadband	Galaxies	M-81, M-82	01:43 – 05:53	04:57	54	Rot Ursa Major: Bode's Cigar

Prospective Imaging Objects – December 12 2023

Plan	Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
	Primary Focus	Nebula	PN	NGC-40	06:49 – 10:08	07:16	04	Cepheus: Bow-Tie Nebula (Sm/Med)
	Primary Focus	Broadband	Galaxies	NGC67-72	06:49 – 10:54	07:21	04	Andromeda: Andromeda Galaxy Group
	Primary Focus	Broadband	GC	NGC-288	*06:49-09:44	07:55	09	Sculptor: Med/Large Globular
	Primary Focus	Nebula	Nebula	SH2-185	06:49 – 11:43	07:59	10	Cassiopeia: Gamma Cassiopeiae Nebula
	Primary Focus	Broadband	Galaxy	IC-1613	06:49 – 10:26	08:07	10	Cetus: Irregular Dwarf Galaxy
	Primary Focus	Broadband	Galaxies	Arp-133	06:49 – 10:30	08:28	12	Cetus: Minkowski's Object
	Primary Focus	Broadband	Galaxy	NGC-772	06:49 – 12:14	09:02	14	Aries: Nautilus Galaxy
	Primary Focus	Broadband	Galaxies	Abell-426	06:49 – 02:08	10:22	19	Perseus: Perseus Galaxy Cluster
	Primary Focus	Nebula	PN	NGC-1360	*08:43-12:24	10:36	20	Fornax: Robins Egg Nebula
	Primary Focus	Nebula	Nebula	IC-348	07:11 – 02:23	10:47	20	Perseus: Bright Nebula
	Primary Focus	Broadband	Galaxy	IC-342	07:27 – 02:11	10:49	21	Camelopardalis: Large Face On galaxy
	Primary Focus	Nebula	Nebula	IC-405	08:40 – 03:57	12:19	26	Auriga: Flaming Star Nebula
	Primary Focus	Broadband	GC	M-79	*10:23-02:26	12:26	27	Lepus: Med Globular NGC-1904
	Primary Focus	Nebula	PN	IC-418	*09:44-03:05	12:29	28	Lepus: Spirograph Nebula (Sm)
	Primary Focus	Nebula	Nebula	IC-417	08:51 – 04:09	12:30	28	Auriga: The Spider
	Primary Focus	Nebula	Nebula	NGC-1931	08:55 – 04:12	12:33	29	Auriga: The Fly
	Primary Focus	Nebula	PN	NGC-2261	10:58 – 04:24	01:41	45	Monoceros: Hubble's Variable Nebula
	Primary Focus	Nebula	Nebula	NGC-2264	10:56 – 04:30	01:43	46	Monoceros: Cone Nebula-1
	Primary Focus	Nebula	Nebula	IC-2177	*11:46-04:23	02:07	47	Monoceros: Seagull Nebula head
	Primary Focus	Nebula	PN	NGC-2440	*12:36-04:50	02:44	51	Puppis: Bow-tie Nebula
	Primary Focus	Nebula	PN	NGC-2610	*01:53-05:12	03:35	52	Hydra: Sm/Med Planetary
	Primary Focus	Broadband	Galaxy	UGC-5470	02:15 – 05:53	05:10	56	Leo: Powder Keg Galaxy
	Primary Focus	Broadband	Galaxies	NGC-3166, 3169	02:51 – 05:53	05:15	56	Sextans: Galaxy Pair
	Primary Focus	Broadband	Galaxies	NGC-3227, 3226	02:11 – 05:53	05:25	57	Leo: Interacting Galaxy Pair

Prospective Imaging Objects – December 12 2023

Imaging Summary December 12, 2023

Astronomical Dusk = 06:49

Astronomical Dawn = 05:53

Imaging Plans

Plan	Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Imaging Schedule
HS1a	HyperStar	Nebula	Nebula	IC-1848,1805	07:47 – 03:12	11:29	22	C1-C4 07:30 – 03:30 (Composite4!)
HS1b	HyperStar	Nebula	Nebula	IC-2169	12:40 – 05:31	03:27	50	3:30 – 5:30
HS2a	HyperStar	Nebula	Nebula	SH 2-132	06:52 – 11:05	07:16	02	07:00 – 11:00
HS2b	HyperStar	Nebula	Nebula	SH 2-240	11:06 – 05:31	02:35	38	11:00 – 05:30(Rot-Comp2)
FR1a	Focal Reducer	Nebula	Nebula	SH 2-132	06:52 – 11:05	07:16	02	07:00 – 11:30
FR1b	Focal Reducer	Nebula	Nebula	NGC-2174	11:50 – 05:31	03:05	46	11:30 – 05:31
FR2a	Focal Reducer	Nebula	Nebula	SH 2-155	06:52 – 11:34	07:54	05	07:00 – 11:30
FR2b	Focal Reducer	Nebula	Nebula	NGC-1977	12:51 – 04:12	02:31	37	01:00 – 04:00
PN1a	Primary Focus	Nebula	PN	NGC-40	06:52 – 12:02	09:10	10	07:00 – 11:00
PN1b	Primary Focus	Nebula	PN	NGC-1360	*10:36-02:23	12:30	26	11:00 – 02:00
PN1c	Primary Focus	Nebula	PN	NGC-2261	12:52 – 05:31	03:35	51	02:00 – 05:30
PF1a	Primary Focus	Nebula	Nebula	SH 2-155	06:52 – 11:33	07:54	05	07:00 – 11:00
PF1b	Primary Focus	Nebula	Nebula	NGC-1579	09:46 – 05:06	01:26	30	11:30 – 5:00
PF2a	Primary Focus	Broad Spectrum	Galaxies	NGC-7317	06:52 – 11:11	07:33	03	07:00 – 11:00
PF2b	Primary Focus	Broad Spectrum	Galaxy	IC-342	09:21 – 04:05	12:43	27	11:00 – 04:00