

Prospective Imaging Objects – December

Astronomical Data

Sunrise	Sunset	Astronomical Dusk	Astronomical Dawn	Imaging	Data Date
07:24am	05:22 pm	06:50 pm	05:55 am	11:05	December 15

Hardware Info

Configuration	FL	FOV	FOV°	FR	Image Scale (1 – 1.5) ideal
C11HD ZWO ASI-6200MC	2800 mm	45' x 30'	0.75° x 0.5°	10	0.280"/pix (Oversampled)
C11HD 0.7xReducer ASI-6200MC	1960 mm	60' x 45'	1.0° x 0.75°	7	0.393"/pix (Oversampled)
C11HD HS-v4 ZWO ASI-6200MC	540 mm	228' x 150'	3.8° x 2.5°	1.9	1.4"/pix (Undersampled)
C6 ZWO ASI-6200MC	1500 mm	83' x 55'	1.38° x 0.92°	10	0.52"/pix (Oversampled)
C6 0.63 Corrector ZWO ASI-6200MC	1220 mm	131' x 88'	2.18° x 1.46°	6.3	0.82"/pix (Oversampled)
C6 HS-v4 ZWO6200MC	300mm	412' x 275'	6.87° x 4.58°	2.0	2.59"/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




Sculptor Galaxy (NGC 253)
 Constellation: Sculptor

- 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

<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: 06:50 – 09:52 Transit: 06:58 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: 06:50 – 10:38 Transit: 07:03 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: 06:50 – 11:10 Transit: 07:18 75°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 


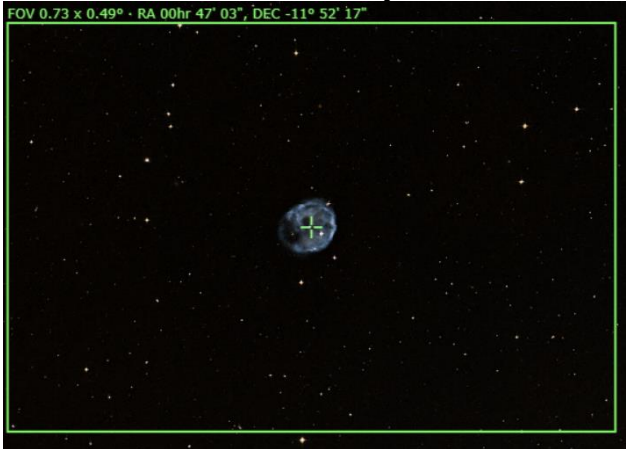

Prospective Imaging Objects – December

<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 Imaging Window: 06:50 – 11:10 Transit: 07:18 75°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer Composite!</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: 06:50 – 11:10 Transit: 07:18 75°</p>	<p style="text-align: center;">Primary Focus</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: 06:50 – 11:16 Transit: 07:24 75°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 



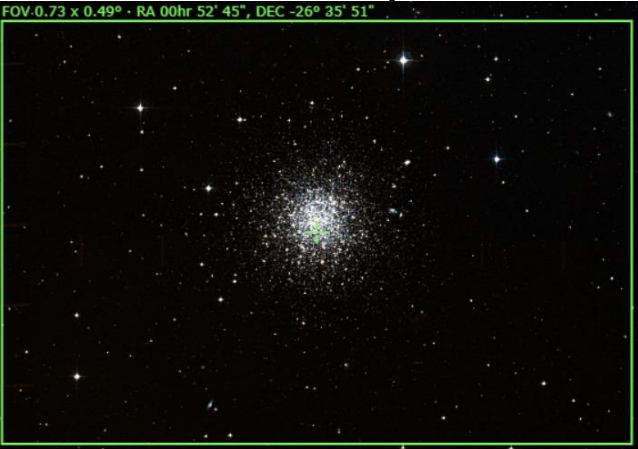
Prospective Imaging Objects – December

<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: 06:50 – 11:14 Transit: 07:25 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 22s DEC = 41° 41' 07" (Star = 41.2 x 27.5 arcsec / Orientation: 0 Mag E of N / Pixel scale = 0.46 arcsec/pix / 11.57Diam.)</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: 06:50 – 11:16 Transit: 07:27 83°</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 42' 42", DEC 40° 51' 57"</p>
<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: 06:50 – 11:16 Transit: 07:27 82°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">The Andromeda Galaxy (M-31, M-32, NGC-224) Constellation: Andromeda RA = 00h 42m 44s DEC = 41° 16' 08" (Star = 41.2 x 27.5 arcsec / Orientation: 0 Mag E of N / Pixel scale = 0.46 arcsec/pix / 11.57Diam.)</p>




Prospective Imaging Objects – December

<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: *06:50 – 10:22 Transit: 07:32 45°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p style="font-size: small;">Skull Nebula (NGC-246) and Galaxy NGC-255 Constellation: Cetus the Whale RA: 00h 47m 00s, DEC: -11deg 40' 40" Size: 51.7 x 34.5 arcmin Orientation: 39Mag E of N Pixel scale: 0.579 arcsec/pixel FL: 1900mm James Volder Date: 2024-09-26 Location: Chandler, AZ Config: C11-HD Focal Reducer Filter: Baader Skyglow Camera: QHY 230C Exposure Info: 2000ms/Frame Gain: 1200 Offset: 100</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: *06:50 – 10:22 Transit: 07:32 45°</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 47' 03", DEC -11° 52' 17" James Volder Date: 2024-09-26 Location: Chandler, AZ Config: C11-HD Primary Focus Filter: Baader Skyglow Camera: QHY 230C Exposure Info: 2000ms/Frame Gain: 1200 Offset: 100</p>
<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: *06:50 – 10:06 Transit: 07:32 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: 41.3 x 27.1 arcmin Orientation: 65Mag E of N Pixel scale: 0.448 arcsec/pixel FL: 2000mm James Volder Date: 2024-09-26 Location: Chandler, AZ Config: C11-HD Primary Focus Filter: Baader Skyglow Camera: QHY 230C Exposure Info: 2000ms/Frame Gain: 1200 Offset: 100</p>

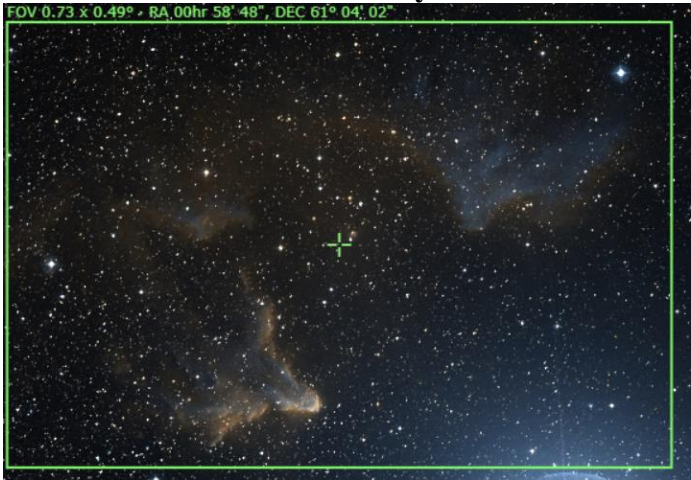
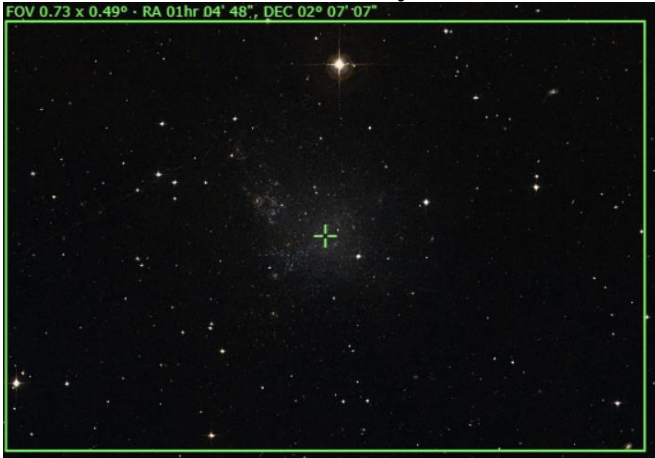
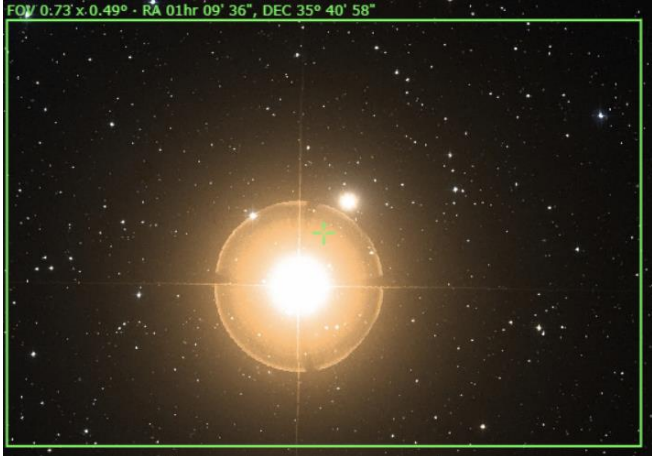
Prospective Imaging Objects – December

<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: *06:50 – 09:28 Transit: 07:37 31°</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) <small>James Yule (Duxco) 2020 (2.14) Location: Mountain Ground Flatland, AZ Constellation: Sculptor RA = 00h 50m 03.1s DEC = -25deg 54' 37.0" Size = 3.14 x 2.89 deg Orientation: 5deg E of N Pixel scale = 2.28 arcsec/pixel FL=500mm Config: C-11HD HyperStar V4 Bruder Skyglow OFY 12k Exposure Info: 21 (Hrbnj/5min) Gain: 3200 Offset: 180</small></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: *06:50 – 09:28 Transit: 07:32 31°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Sculptor Galaxy (NGC 253) <small>James Yule 2019 08.21 Location: Chandler, AZ Config: C11 Stationer L.F. Corrector Bruder Moon Filter OFY 12k Exposure Info: (Hrbnj/5min) Gain: 3200 Offset: 180</small></p>
<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: *06:50 – 09:20 Transit: 07:37 31°</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 52' 45", DEC -26° 35' 51"</p>




Prospective Imaging Objects – December

<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: *06:50 – 11:46 Transit: 07:32 38°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>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: 06:50 – 11:28 Transit: 07:37 67°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<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: 06:50 – 11:30 Transit: 07:45 62°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 



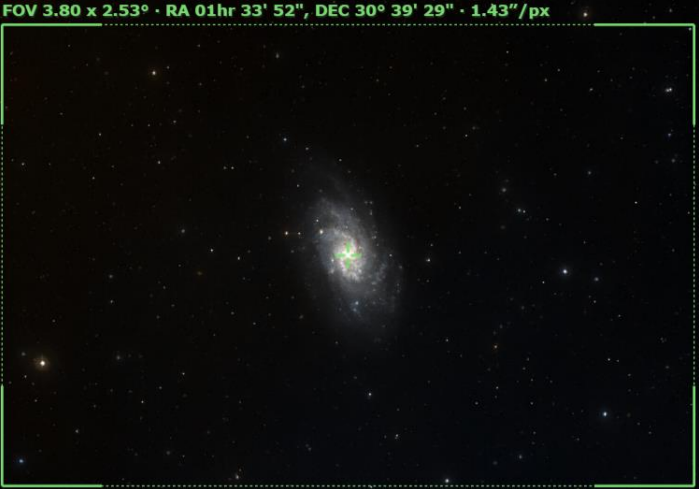
Prospective Imaging Objects – December

<p>Gamma Cassiopeiae Nebula (SH2-185) 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: 06:50 – 11:30 Transit: 07:45 62°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</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: 06:50 – 10:10 Transit: 07:49 59°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Mirachs Ghost (NGC-404) Config: C11-HD ZWO6200MC</p> <p>Type: Elliptical Galaxy</p> <p>Constellation: Andromeda Coordinates: 01h 09' 36" 35° 40' 58"</p> <p>Close Star: SAO-544471 (Mirach) Catalog Objects: NGC-404 Imaging Window: 06:50 – 11:37 Transit: 07:54 88°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December

<p>NGC-457 & Dolphin Nebula Config: C11-HD HS ZWO6200MC</p> <p>Type: Open Cluster & Nebula</p> <p>Constellation: Cassiopeia Coordinates: 01° 23' 38" 58° 12' 54"</p> <p>Close Star: SAO-22268 (Ruchbah) Catalog Objects: NGC-457 Imaging Window: 06:50 – 11:54 Transit: 08:04 65°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">Firefox Nebula (SH-2-188), Owl Cluster(NGC-457), NGC-436 <small>Constellation: Cassiopeia RA: 01h 23m 38.12s, DEC: +58° 12' 54.12"</small></p>
<p>Owl Cluster (NGC-457) Config: C11-HD ZWO6200MC</p> <p>Type: Open Cluster & Nebula</p> <p>Constellation: Cassiopeia Coordinates: 01h 23' 38" 58° 12' 54"</p> <p>Close Star: SAO-22268 (Ruchbah) Catalog Objects: NGC-457 Imaging Window: 06:50 – 11:54 Transit: 08:04 65°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> <p style="font-size: x-small; color: green;">FOV 0.73 x 0.49° - RA 01hr 19' 33", DEC 58° 17' 42"</p> 
<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: 06:50 – 10:14 Transit: 08:10 55°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> <p style="font-size: x-small; color: green;">FOV 0.73 x 0.49° - RA 01hr 25' 27", DEC -01° 29' -3"</p> 




Prospective Imaging Objects – December

<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: 06:50 – 12:04 Transit: 08:15 65°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Sharp Nebula (Sh 2-188) <small>Copyright © 2016 James Yoder</small></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: 06:50 – 12:04 Transit: 08:18 63°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">M-103 Open Cluster in Cassiopeia</p> <p style="text-align: right; font-size: small;">James Yoder 2016.09.10</p>
<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: 06:50 – 11:54 Transit: 08:18 87°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> <p style="font-size: x-small; color: green;">FOV 3.80 x 2.53° · RA 01hr 33' 52", DEC 30° 39' 29" · 1.43"/px</p> 



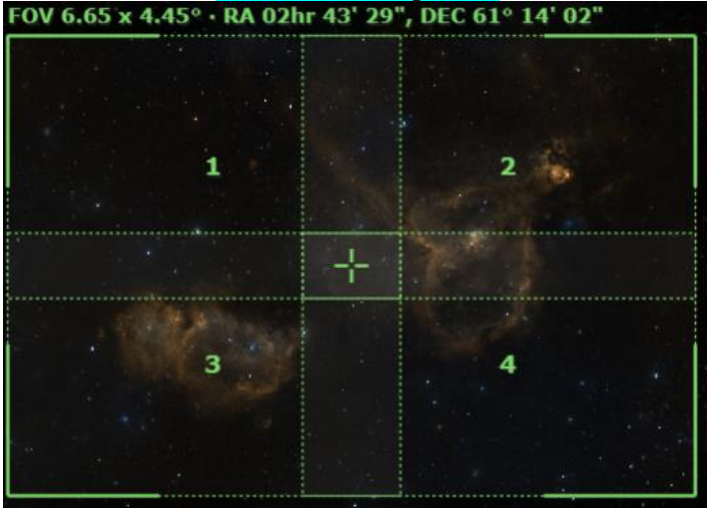
Prospective Imaging Objects – December

<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: 06:50 – 11:54 Transit: 08:18 87°</p>	<p>CH11-HD Focal Reducer 90° Rotation</p>  <p><small>Triangulum Galaxy (M-33) Constellation: Triangulum RA = 01h 33m 52.00s - 01h 33m 52.00s Dec = 30° 39' 29.00" Orientation: 00deg E of N Pixel scale = 0.40 arc/pixel FL = 1000mm James Yoder Location(s): Massacre Grounds(2020 10 14), Chandler(2020 10 19), AZ Config: C11 HD Focal Reducer ZWO6200MC Exposure Info: 1400ms@Gain: 3200 Offset: 100</small></p>
<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: 06:50 – 11:28 Transit: 08:21 72°</p>	<p>C-11 HD: Primary Focus</p>  <p><small>Spiral Galaxy M-74 (NGC-628) Constellation: Pisces RA = 01h 36m 42.00s - 01h 36m 42.00s Dec = 15° 46' 60.00" Orientation: 00deg E of N Pixel scale = 0.40 arc/pixel James Yoder Location(s): Massacre Grounds(2020 10 14), Chandler(2020 10 19), AZ Config: C11 HD Primary Focus ZWO6200MC Exposure Info: 200ms@Gain: 3200 Offset: 100</small></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/ NGC-650</p> <p>Imaging Window: 06:50 – 12:20 Transit: 08:27 72°</p>	<p>C-11 HD: Primary Focus</p>  <p><small>Little Dumbbell Nebula (M-76, NGC-650) Constellation: Perseus RA = 01h 42m 18.00s - 01h 42m 18.00s Dec = 51° 34' 17.00" Orientation: 04deg E of N Pixel scale = 0.440 arc/pixel FL = 2000mm James Yoder Location(s): Massacre Grounds(2020 10 14), Chandler(2020 10 19), AZ Config: C11 HD Blade SharpCap QHY128L Exposure Info: 400ms@Gain: 3200 Offset: 100</small></p>



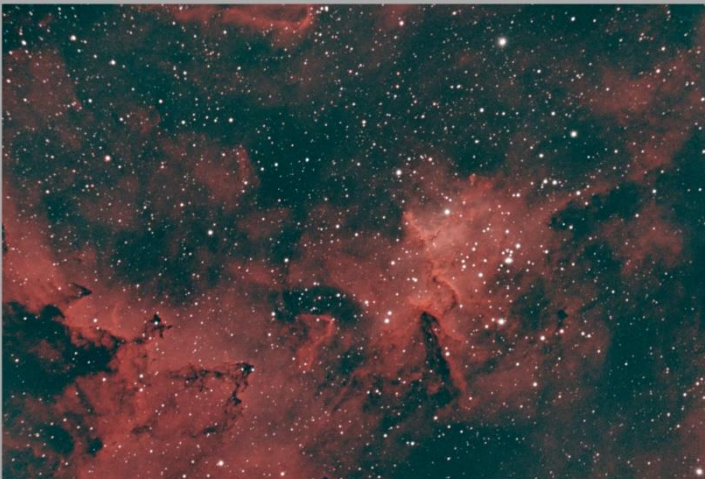
Prospective Imaging Objects – December

<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: 06:50 – 11:58 Transit: 08:44 76°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 06:50 – 12:54 Transit: 09:03 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: 06:50 – 12:57 Transit: 09:07 81°</p>	<p style="text-align: center;">Primary Focus</p> 




Prospective Imaging Objects – December

<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: 06:50 – 12:52 Transit: 09:12 90°</p>	<p>Primary Focus</p>  <p>NGC-925</p>
<p>Fish Head Nebula (IC-1795) Config: C11-HD FR ZWO6200MC </p> <p>Type: Bright Nebula Constellation: Cassiopeia</p> <p>Coordinates: 02h 27' 03" 62° 02' 31"</p> <p>Close Star: SAO-38787 (Mirfak) Catalog Objects: IC-1795</p> <p>Imaging Window: 06:50 – 12:54 Transit: 09:10 87°</p>	<p>CH11-HD Focal Reducer</p>  <p>Fish Head Nebula (IC-1795)</p>
<p>Heart and Soul Nebulas Config: C11 HS ZWO6200MC</p> <p>Type: Diffuse Nebula</p> <p>Constellation: Cassiopeia Coordinates (RA, DEC): Pane 1: 02hr 55' 41", 62° 09' 11" Pane 2, 02hr 31' 16", 62° 09' 11" Pane 3, 02hr 54' 58", 60° 15' 00" Pane 4, 02hr 31' 59", 60° 15' 00"</p> <p>Close Star: SAO-38787 (Mirfak) Catalog Objects: IC-1848</p> <p>Imaging Window: 06:50 – 01:02 Transit: 09:17 62°</p>	<p>C-11 HD: HyperStar v4 SUPER-4 Composite!</p>  <p>FOV 6.65 x 4.45° · RA 02hr 43' 29", DEC 61° 14' 02"</p>

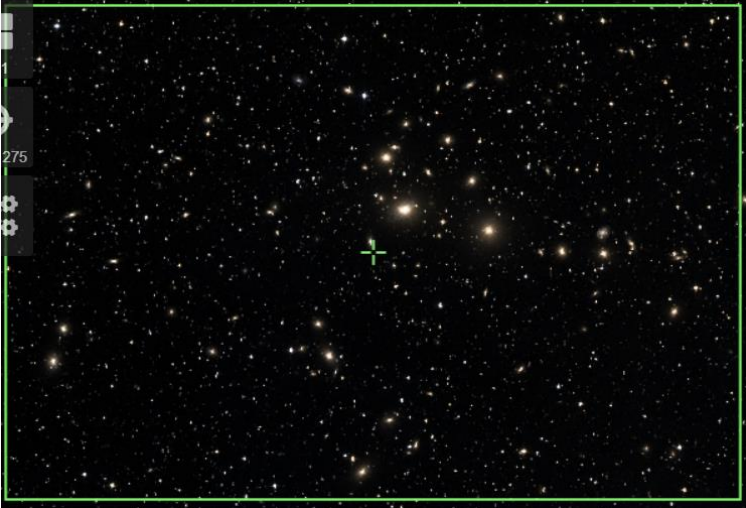

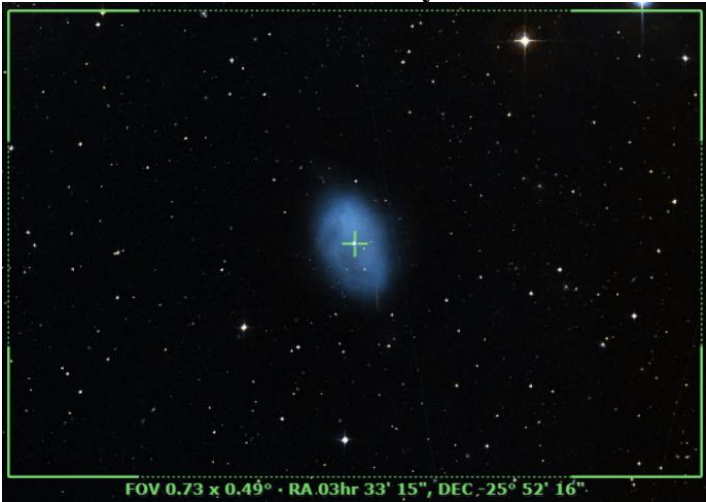
Prospective Imaging Objects – December

<p>Heart Nebula (IC 1805) Config: C11-HD HS ZWO6200MC</p> <p>Type: Diffuse Nebula Peak: October 31 Constellation: Cassiopeia Coordinates: 02hr 31' 16" 61° 21' 36"</p> <p>Close Star: SAO-12031 Catalog Objects: IC 1805</p> <p>Imaging Window: 06:50 – 01:02 Transit: 09:17 62°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">Heart Nebula (IC 1805) Constellation: Cassiopeia</p> <p style="font-size: x-small; text-align: right;">James Yoder 2018.09.20 Location: Chandler, AZ Config: C11 HyperStar Astronomik CLS-CXD (OHY 128) Exposure Info: 250ms/Star (Gain: 3200, Offset: 180)</p>
<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: 06:50 – 01:02 Transit: 09:17 62°</p>	<p style="text-align: center;">CH11-HD Focal Reducer</p>  <p style="font-size: x-small;">Heart Nebula core (IC-1805) Constellation: Cassiopeia Size: 100.00x66.66x33.33 - 1000x666.67x333.33 (3.41x zoom) (Pixel scale: 0.137 arcseconds)</p> <p style="font-size: x-small; text-align: right;">James Yoder 2019.11.01 Location: Chandler, AZ Config: C11-HD F7 Reducer Astronomik CLS-CXD (OHY 128) Exposure Info: 200ms/Star (Gain: 2000, Offset: 180)</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: 06:50 – 01:02 Transit: 09:17 62°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: x-small;">Heart Nebula Core (IC-1805) Constellation: Cassiopeia</p> <p style="font-size: x-small; text-align: right;">James Yoder 2018.09.14 Location: Chandler, AZ Config: C11 Starizona LF Reducer SFP Triad Filter (OHY 128) Exposure Info: 250ms/Star (Gain: 1100, Offset: 170)</p>




Prospective Imaging Objects – December

<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: 07:21 – 11:38 Transit: 09:27 57°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 06:50 – 01:23 Transit: 09:36 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;"> Image Date: 2018 08 20 Location: Chandler, AZ Config: C11 HyperStar Astronomik 128C C8HY128c Exposure Info: 240min@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: 06:50 – 01:23 Transit: 09:36 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;"> Image Date: 2018 11 09 Location: Chandler, AZ Config: C11 Seymour 12 Refractor 180CDS Star 100 128c Exposure Info: 270min@5min Gain: 1200 Offset: 180 </p>


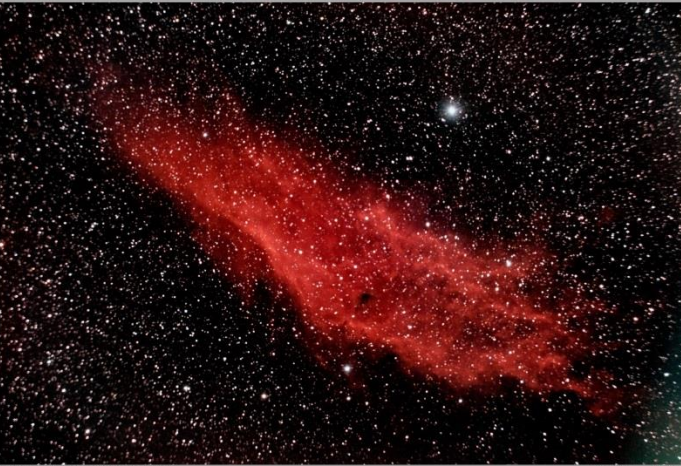

Prospective Imaging Objects – December

<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: 06:50 – 01:53 Transit: 10:04 82°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 06:50 – 01:51 Transit: 10:13 88°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>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: NGC-1360</p> <p>Imaging Window: *08:30 – 12:13 Transit: 10:17 31°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December

<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: 06:56 – 02:07 Transit: 10:29 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 07:12 – 01:56 Transit: 10:31 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: 07:11 – 01:56 Transit: 10:30 81</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p><small>The Pleiades (M-45) Constellation: Taurus</small></p> <p><small>Image Acq'd: 2018-10-08 Location: Mountain View, CA Config: C11 HyperStar (HW) D16 Exposure: 160, 20000000, Gain: 1180, Offset: 170</small></p>

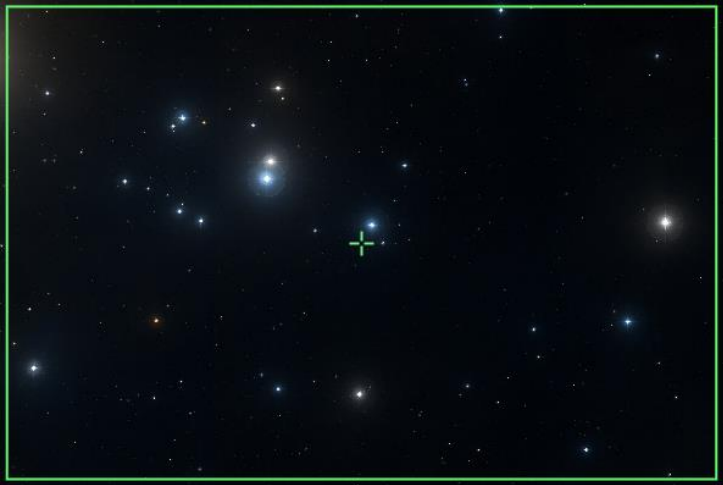

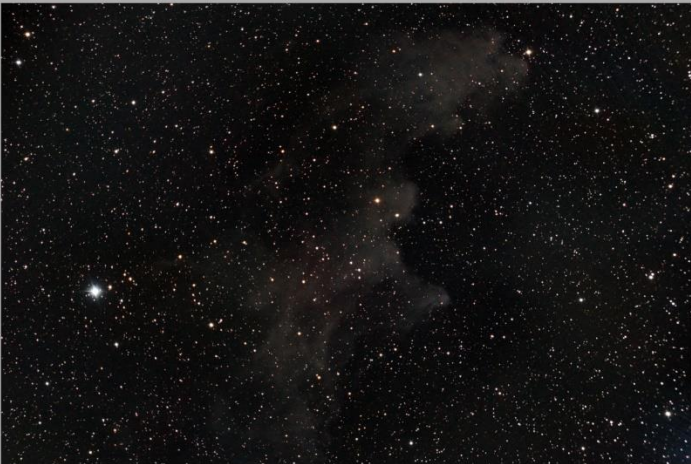
Prospective Imaging Objects – December

<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: 07:11 – 01:56 Transit: 10:30 81°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small;">The Pleiades (M-45) Constellation: Taurus RA = 03h 46m 15.932s DEC = +24deg 12' 07.154" Size = 49.9 x 33.6 arcmin Pixel scale = 0.582 arcsec/pixel</p> <p style="font-size: x-small; text-align: right;">James Yoder 2019 09 27 Location: Phoenix Greenh. Trailhead, AZ Config: C1 LF ZWO6200MC Astrocam C13.5-C13 QHY128C Exposure Info: 200img/5min Gain: 3200 Offset: 100</p>
<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: 07:09 – 02:32 Transit: 10:47 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 Yoder 2019 08 31 Location: Chandler, AZ Config: C11 HyperStar Astrocam C13.5-C13 QHY128C Exposure Info: 220img/5min Gain: 3200 Offset: 100</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: 07:11 – 02:37 Transit: 10:51 62°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">NGC-1501 (Oyster Nebula) Constellation: Camelopardalis</p> <p style="font-size: x-small; text-align: right;">James Yoder Date: 2021-12-10 Location: Chandler, AZ Config: C-11 HD EXP T100 T100 Ultra ZWO 6200MC Exposure Info: 162 img/20min Gain: 100 Offset: 50 RA = 04h 06m 05.2s DEC = +60deg 55' 03.3" Size = 18.5 x 13.9 arcmin Orientation: -0.5deg E of N Pixel scale = 0.277 arcsec/pixel FL=200mm</p>

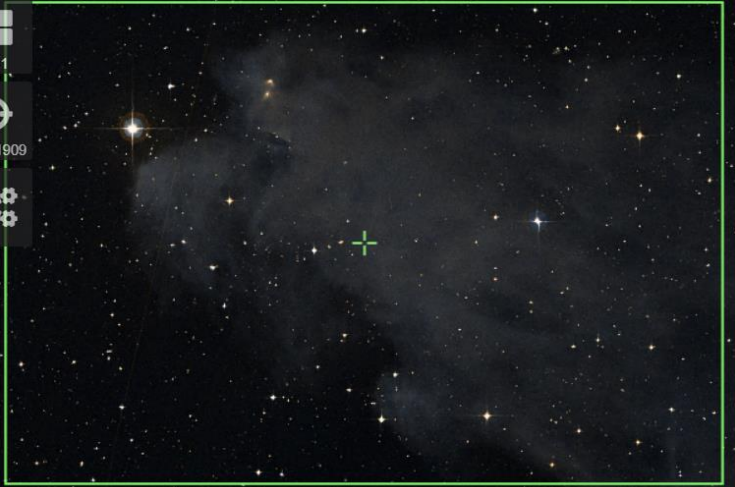


Prospective Imaging Objects – December

<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: 07:22 – 10:53 Transit: 10:53 87°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">NGC-1514 (Crystal Ball Nebula) Constellation: Taurus RA = 04h 09m 17.00s DEC = +30deg 46' 35.00" Size = 18.5 x 11.8 arcmin Orientation: 0.4deg E of N (Pixel scale = 0.278 arcseconds) FL = 2000mm</p> <p style="font-size: x-small; text-align: right;">James Yoder Date(s) 2020.12.09 Location: Chandler, AZ Config: C-11 HD SFP Troll Star ZWO6200MC Exposure Info: 44 Base/2min Gain: 100 Offset: 50</p>
<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: *08:57 – 01:07 Transit: 10:58 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) Constellation: Eridanus RA = 04h 14m 16.00s DEC = -12deg 44' 20.00" Size = 17.0 x 15.7 Orientation: 0.0deg E of N (Pixel scale = 0.278 arcseconds) FL = 2000mm</p> <p style="font-size: x-small; text-align: right;">James Yoder Date(s) 2020.12.09 Location: Chandler, AZ Config: C-11 HD SFP Troll Star ZWO6200MC Exposure Information: 30min/2min 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: 07:56 – 02:22 Transit: 11:06 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> 




Prospective Imaging Objects – December

<p>Hyades (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: 08:10 – 02:24 Transit: 11:14 73°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 
<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: 07:37 – 02:57 Transit: 11:14 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: *09:13 – 02:20 Transit: 11:46 49°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p><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 arcsec/pixel </small></p> <p><small>James Yoder 2019.09.25 Location: Chandler, AZ Config: C11 HyperStar Baader Skyliner QHY 236 Exposure Info: 54frames@90s Gain: 3200 Offset: 180 </small></p>




Prospective Imaging Objects – December

<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: *09:13 – 02:20 Transit: 11:46 49°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Foxface Nebula (NGC 1788) Config: C11 HS ZWO6200MCc </p> <p>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: 10:04 – 01:44 Transit: 11:51</p>	<p style="text-align: center;">Hyperstar</p> <p style="text-align: center;">FOV 3.80 x 2.54° · RA 05hr 06' 10", DEC -04° 04' 26"</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: 10:04 – 01:44 Transit: 11:51</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 



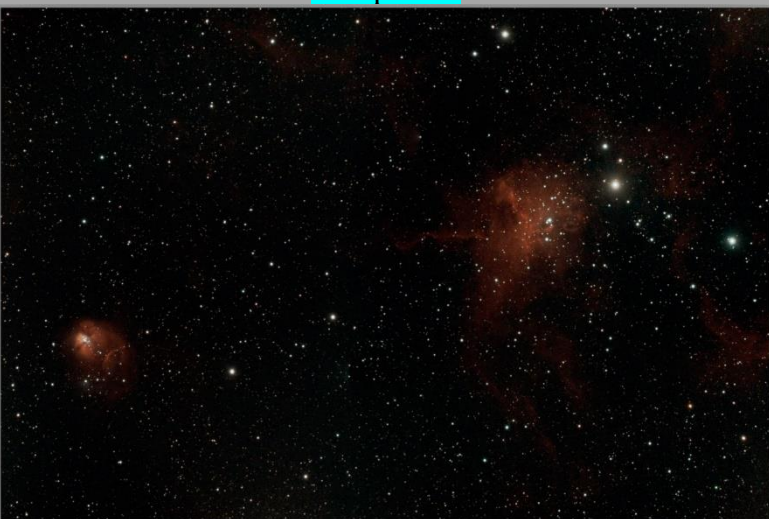
Prospective Imaging Objects – December

<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: 10:04 – 01:44 Transit: 11:51</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Flaming Star Nebula (IC-405) Config: C11-HD HS ZWO6200MC</p> <p>Type: Bright Nebula Peak: Constellation: Auriga Coordinates: 05hr 19' 38" 33° 49' 10"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: IC 405, IC 410</p> <p>Imaging Window: 08:26 – 03:43 Transit: 12:01 89°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small;">Flaming Star Nebula (IC-405, IC-410, IC-417) Constellation: Auriga</p> <p style="font-size: x-small;"> <small>James Yoder (Denton) 2021-01-02 Location: Chandler, AZ Config: C-11HD HyperStar v4 AmScope C15-CCD QHY172C RA = 05h 19m 35.62s DEC = +33deg 49' 10.20" Star: 1.8x 2.28-Arg. Pixel scale: 2.28 arcsec/pixel Exposure info: 47Through/Star Gain: 2000 (08Sec 180)</small> </p>
<p>Flaming Star Nebula (IC 405) Config: C11-HD FR ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Auriga Coordinates: 05hr 15' 55" 34° 29' 08"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: IC 405</p> <p>Imaging Window: 08:26 – 03:43 Transit: 12:01 89°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p style="font-size: small;">Flaming Star Nebula (IC-405) Constellation: Auriga</p> <p style="font-size: x-small;"> <small>James Yoder (Denton) 2021-01-02 Location: Chandler, AZ Config: C-11 HD 1.67 Reducer Focal Reducing L-Enhance Camera QHY172C RA = 05h 15m 55.10s DEC = +34deg 27' 32.1" Star = 18.8 x 41.7 arcsec Orientation: 184g E of N Pixel scale = 0.629 arcsec/pixel FL = 1097mm Exposure info: 47Through/Star Gain: 2000 (08Sec 180)</small> </p>




Prospective Imaging Objects – December

<p>Flaming Star Nebula (IC 405) Config: C11-HD ZWO6200MC </p> <p>Type: Bright Nebula Peak: Constellation: Auriga Coordinates: 05hr 16' 37" 34° 23' 47"</p> <p>Close Star: SAO-77168 (Elnath) Catalog Objects: IC 405</p> <p>Imaging Window: 08:26 – 03:43 Transit: 12:01 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 08:31 – 03:47 Transit: 12:06 90°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p><small>Tadpole Nebula (IC-410) Constellation: Auriga RA = 08h 22m 55.355s, DEC = +33deg 23' 32.48", Size = 78.3 x 38.8 arcmin, Orientation: Ang 8. of N, Pixel scale = 0.61 arcsec/pix (F1-1000nm) Image Name: Dec2023 05 01 Location: Cheshire AZ Config: C-11-HD / F7 Reducer / Filter: Optolong L-Orange / Camera: ORV128C / Exposure Info: 200ms/Frame / Gain: 3200 / Offset: 100</small></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: 08:31 – 03:47 Transit: 12:06 90°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p><small>Tadpole Nebula (IC-410) Constellation: Auriga RA = 08h 22m 35.015s, DEC = +33deg 23' 03.01", Size = 42.4 x 28.8 arcmin, Pixel scale = 0.842 arcsec/pix Image Name: Dec2023 05 01 Location: Cheshire AZ Config: C-11 HD / Astronomik CA-SACCD / ORV128C / Exposure Info: 200ms/Frame / Gain: 3200 / Offset: 100</small></p>



Prospective Imaging Objects – December

<p>M-79 (NGC-1904) Config: C11HD 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: *10:10 – 02:16 Transit: 12:11 32°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>Spirograph Nebula (IC 418) Config: C11HD 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: *10:06 – 02:16 Transit: 12:11 44°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</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°</p> <p>Frame 01 RA: 05hr 30' 44"DEC: 34° 20' 41"</p> <p>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: 08:36 – 03:54 Transit: 12:12 89°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer Composite!</p>  <p><small>The Spider and the Fly (IC-417 & NGC-1931) Constellation: Auriga RA = 05h 29m 17.5s DEC = -10deg 37' 34.90" Star = 60.0 x 45.3 pixels Observation: 6.5Mag E-ON, Pixel scale = 8.428 arcsecond FL=1050mm Image Size: 1024x1024 Camera: C-11 HD 1.1" Focuser (Star Optimizing L-Extension) Camera: QHY 128M Exposure Info: Primary: 200seconds, FocalRed: 100seconds/Frame, Gain: 2000, Offset: 100</small></p>

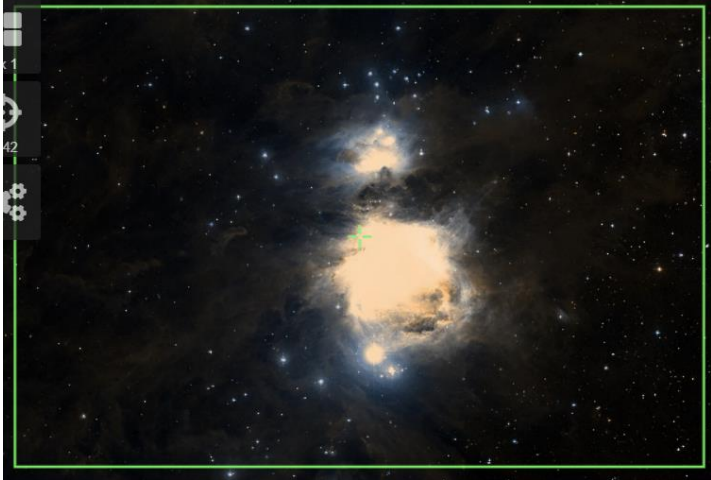


Prospective Imaging Objects – December

<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: 08:36 – 03:54 Transit: 12:12 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 08:35 – 03:56 Transit: 12:12 88°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</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: 08:40 – 03:57 Transit: 12:15 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 

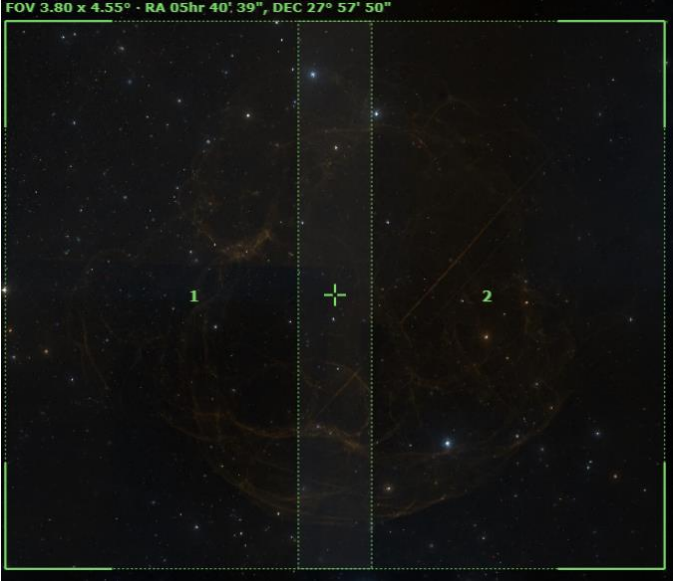
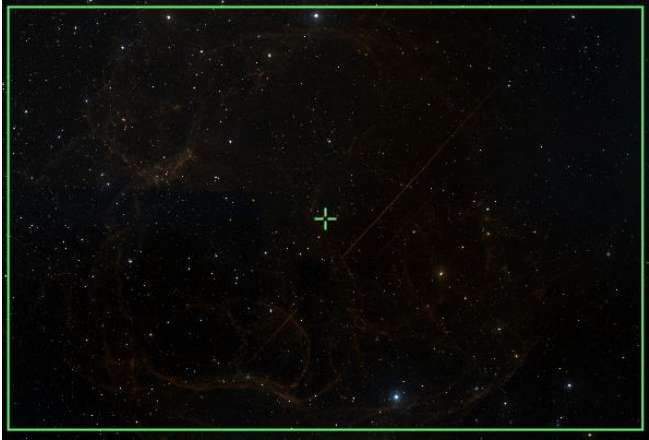
Prospective Imaging Objects – December

<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: 09:03 – 03:40 Transit: 12:18 79°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small; text-align: center;">Crab Nebula (Messier-1) <small>James Yoder Date(s) 2022-02-05, 07, 08, 09, 10 Location: Chandler, AZ Constellation: Taurus RA = 05h 34m 31.5s DEC = +22deg 00' 34.4" Size = 31.5 x 21.0 arcmin Orientation: -0.34deg Pixel scale = 0.447 arcsec/pixel FL=2756mm Config: C-11 HD Filter: QFF Filter Ultra (QFF1256) Exposure Info: (756ms)(4min) Gain: 3200 OBSId: 180</small></p>
<p>The Orion Complex Config: C11 HS ZWO6200MC</p> <p>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"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: M-42</p> <p>Imaging Window: 10:46 – 01:59 Transit: 12:19</p>	<p style="text-align: center;">C-11 HD: HyperStar v4 SUPER-6 Composite!</p> <p style="text-align: center; color: green;">FOV 6.95 x 6.76° - RA 05hr 37' 23", DEC -03° 07' 40"</p> 




Prospective Imaging Objects – December

<p>The Orion Nebula (M 42) Config: C11-HD HS ZWO6200MC</p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 05hr 35' 46" -05° 15' 34"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: M-42</p> <p>Imaging Window: 10:46 – 01:59 Transit: 12:19</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 
<p>The Orion Nebula (M 42) Config: C6-SE HS ZWO6200MC (Cropped)</p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 05hr 35' 18.4" -05° 23' 51.0"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: M-42</p> <p>Imaging Window: 10:46 – 01:59 Transit: 12:19</p>	<p style="text-align: center;">C6-SE: HyperStar v4</p>  <p><small>Orion Nebula (M-42) Constellation: Orion the Hunter RA: 05h 35m 18.40s - Dec: -05° 23' 51.00" - Size: 4.41 x 3.97 deg (Distance: 1540ly R.A.N. Pixel scale: 1.11 arcsecond) FI: 100mm</small></p> <p><small>James Webb Orion Nebula (M-42) Location: Chandler AZ Config: C-6-SE HyperStar V4 OPT Filter: H&A (H&A) FWHM: 0.000000 Exposure: 122.000000 Gain: 100</small></p>
<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: 10:46 – 01:59 Transit: 12:19</p>	<p style="text-align: center;">Primary Focus</p>  <p><small>Orion Nebula (M-42) Constellation: Orion</small></p> <p><small>James Webb Orion Nebula (M-42) Location: Chandler AZ Config: C11 Orion 11.5" Filter: H&A (H&A) FWHM: 0.000000 Exposure: 5.000000 Gain: 500 Offset: 100</small></p>




Prospective Imaging Objects – December

<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: 08:59 – 03:58 Transit: 12:25 85°</p>	<p>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: 08:59 – 03:58 Transit: 12:25 85°</p>	<p>C-11 HD: HyperStar v4</p> 

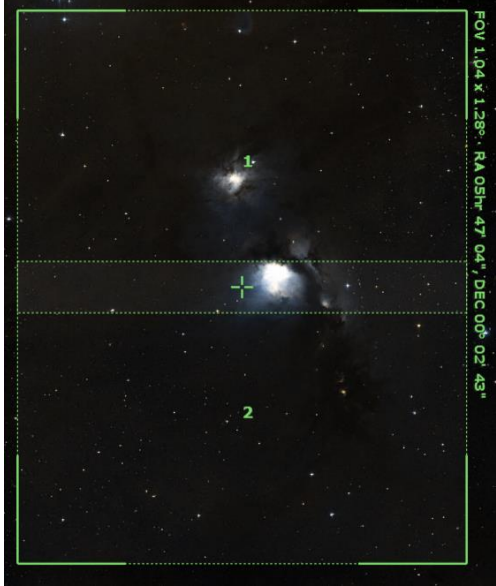

Prospective Imaging Objects – December

<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: 10:30 – 02:28 Transit: 12:25 55°</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;">Date: 2024-11-06 Location: Mountain View, CA Config: C11 HyperStar v4 ZWO6200MC Exposure Info: 10x300s/Star Guide 2.00s Offset: 17s</p>
<p>Flame Nebula (NGC 2024) Config: C11-HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Orion Coordinates: 05hr 41' 30" -01° 45' 21"</p> <p>Close Star: SAO-132542 (Saiph) Catalog Objects: NGC-2024</p> <p>Imaging Window: 10:30 – 02:28 Transit: 12:25 55°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p style="font-size: small; text-align: center;">FOV 1.05 x 0.70° - RA 05hr 41' 30", DEC -01° 45' 21"</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: 10:30 – 02:28 Transit: 12:25 55°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small;">Flame Nebula (NGC-2024) Constellation: Orion RA: 05h 41m 45.843s DEC: -01d 49' 31.401" Size: 42.1 x 28.8 arcmin. Pixel scale: 1.8 arcsec/pixel</p> <p style="font-size: x-small; text-align: right;">Date: 2024-11-06 Location: Mountain View, CA Config: C11 HD Primary Focus ZWO6200MC Exposure Info: 10x300s/Star Guide 2.00s Offset: 18s</p>



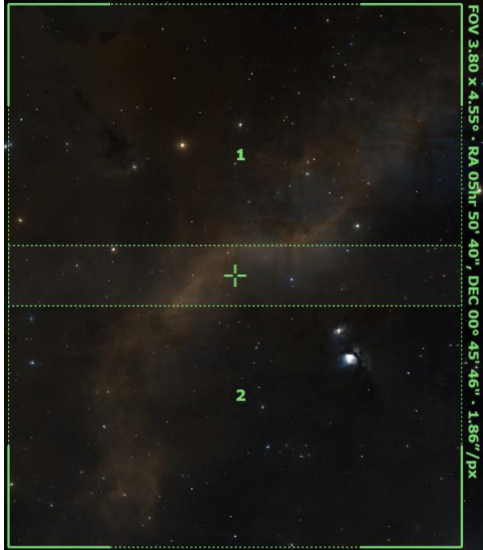
Prospective Imaging Objects – December

<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: 10:33 – 02:23 Transit: 12:25 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;">James Yoder - 2018-12-06 Location: Chandler, AZ Config: C1 Starizona L.F. Reducer + Filter Wheel + ZWO6200MC Exposure Info: 300sec/Frame Gain: 0 (Offset: 100)</p>
<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: 09:45 – 03:14 Transit: 12:26 66°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">NGC-2022 Constellation: Orion</p> <p style="font-size: x-small; text-align: right;">James Yoder Date(s) 2020-12-09, 10 Location: Chandler, AZ Config: C-11 HD EXP1 Third Ultra ZWO6200MC Exposure Info: 5x 10sec/2.0min Gain: 100 (Offset: 50) [RA=05h-42m-06.6s DEC=+09deg 04' 54.9"] Size = 18.5 x 13.9 arcmin Orientation: 0.4deg E of N Pixel scale = 0.277 arcsec/pixel FL=2800mm </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: 09:14 – 03:45 Transit: 12:26 54°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Galaxy Cluster (NGC-1961 et al.) Constellation: Camelopardalis</p> <p style="font-size: x-small; text-align: right;">James Yoder - 2018-10-25 Location: Mountain View, Indiana, AZ Config: C-11 HD ZWO6200MC Exposure Info: 10x 10sec/2.0min Gain: 100 (Offset: 100)</p>


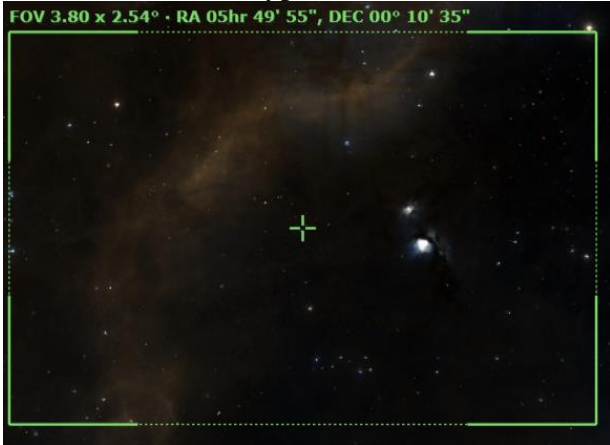

Prospective Imaging Objects – December

<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: 10:25 – 02:43 Transit: 12:31</p>	<p style="text-align: center;">C-11 HD: Focal Reducer Composite!</p> 
<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: 10:25 – 02:43 Transit: 12:31</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 


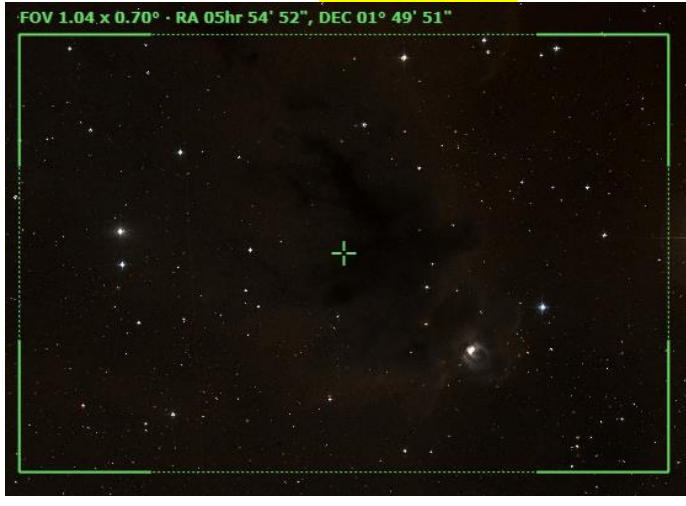

Prospective Imaging Objects – December

<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 (Anilam) Catalog Objects: M-78</p> <p>Imaging Window: 10:25 – 02:43 Transit: 12:31</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: 09:03 – 04:16 Transit: 12:36 89°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>LDN-1622 (Region 01) 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 (Anilam) Catalog Objects: LDN-1622</p> <p>Imaging Window: 10:25 – 02:58 Transit: 12:38 59°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4 Composite!</p> 

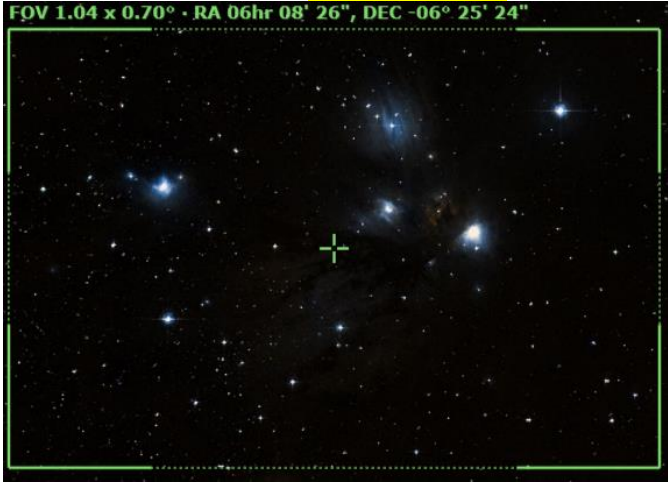

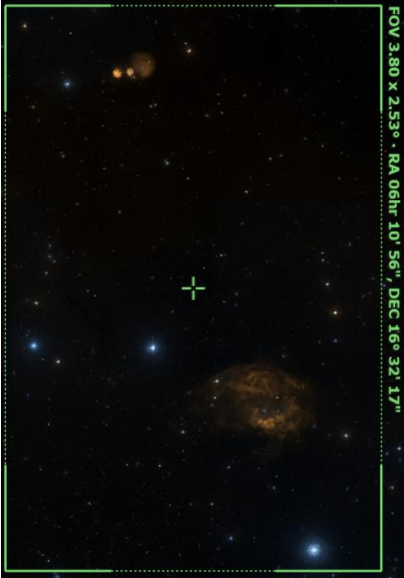
Prospective Imaging Objects – December

<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 (Annilam) Catalog Objects: LDN-1622 Imaging Window: 10:25 – 02:58 Transit: 12:38 59°</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 (Annilam) Catalog Objects: LDN-1622 Imaging Window: 10:25 – 02:58 Transit: 12:38 59°</p>	<p style="text-align: center;">HyperStar</p> 
<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: 10:25 – 02:58 Transit: 12:38 59°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 

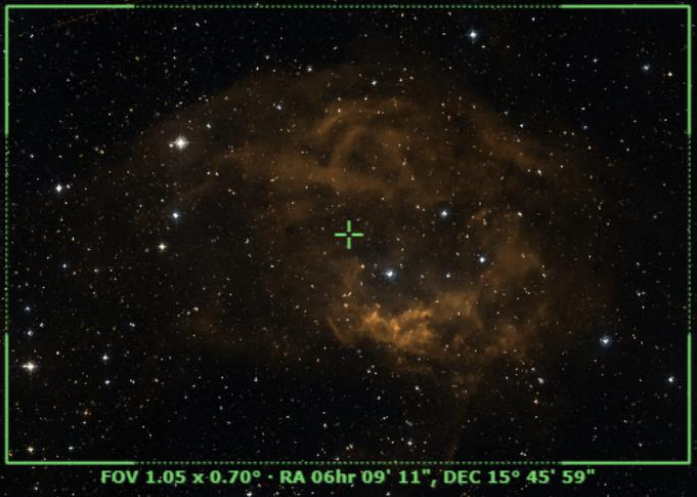


Prospective Imaging Objects – December

<p>LDN 1622 Config: C11HD ZWO6200MC </p> <p>Type: Dark Nebula Peak: Constellation: Orion</p> <p>Camera Rotation - 90° Frame 01 RA: 05hr 56' 28"DEC: 01° 58' 32" Frame 02 RA: 05hr 54' 08"DEC: 01° 58' 35"</p> <p>Close Star: SAO-132346 (Anilam) Catalog Objects: LDN-1622</p> <p>Imaging Window: 10:25 – 02:58 Transit: 12:38 59°</p>	<p>C-11 HD: Focal Reducer Composite!</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: 10:25 – 02:58 Transit: 12:38 59°</p>	<p>C-11 HD: Focal Reducer</p> 
<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: 10:25 – 02:58 Transit: 12:38 59°</p>	<p>C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December

<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: 11:26 – 02:24 Transit: 12:51</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 
<p>Angel Nebula (NGC 2170) Config: C11-HD 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: 11:26 – 02:24 Transit: 12:51</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Angel Nebula (NGC-2170) <small>Constellation: Monoceros RA: 06h 08m 26.1s, DEC: -06° 25' 24.1" (Size: 4.1 x 2.7 arcmin) (Orientation: Right of N, Dist scale: 0.448 arcmin/pixel) (11-09-2006)</small></p>
<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: 09:52 – 03:59 Transit: 12:52 72°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 


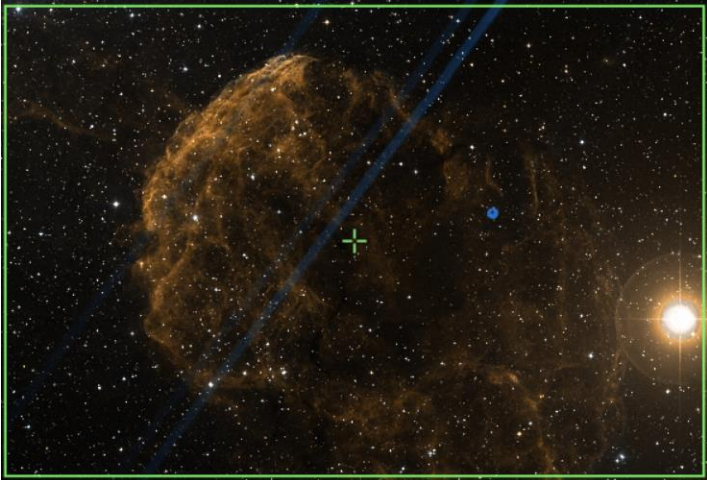

Prospective Imaging Objects – December

<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: 09:52 – 03:59 Transit: 12:52 72°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p>  <p style="text-align: center; font-size: small;">FOV 1.05 x 0.70° · RA 06hr 09' 11", DEC 15° 45' 59"</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: 09:52 – 03:59 Transit: 12:52 72°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 09:33 – 04:19 Transit: 12:53 81°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</p> 

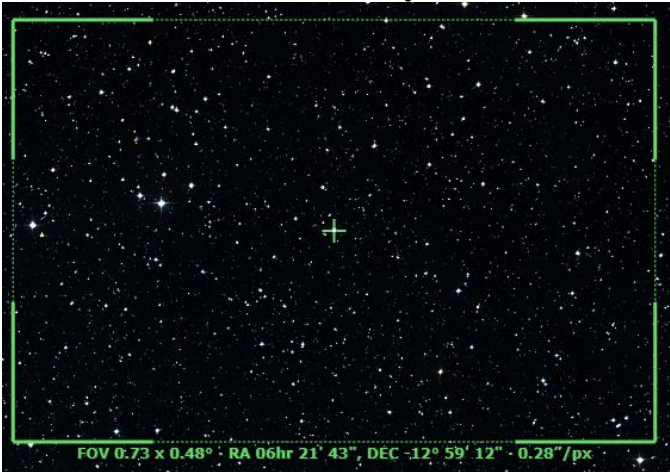


Prospective Imaging Objects – December

<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: 09:42 – 04:12 Transit: 12:53 77°</p>	<p style="text-align: center;">C-11 HD: Focal Reducer</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: 09:42 – 04:12 Transit: 12:53 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 49.310s, DEC = +20deg 29' 52.185\"</p>
<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: 09:51 – 04:09 Transit: 12:57 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 25.460s, DEC = +17deg 59' 18.210\"</p>



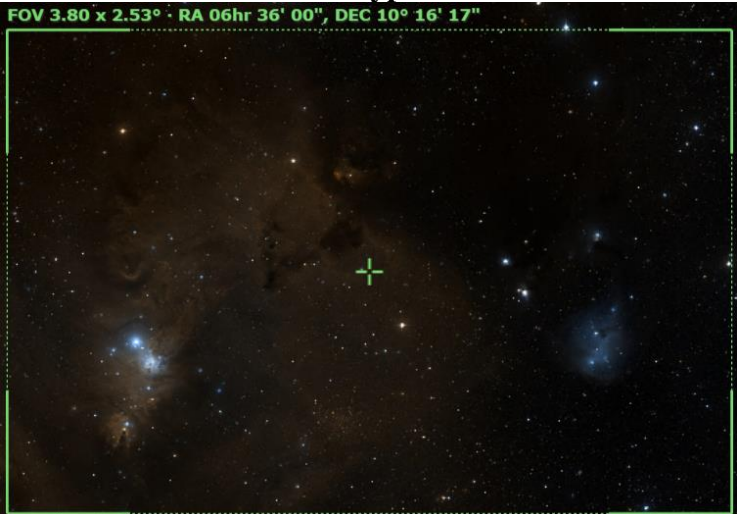
Prospective Imaging Objects – December

<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: 09:45 – 04:24 Transit: 01:01 79°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p>  <p style="font-size: small; text-align: center;">Jellyfish Nebula (IC-443) Constellation: Gemini RA = 23h 19m 25.0s, DEC = +06deg 31' 18.6", Size = 3.14 x 2.89 deg Orientation: 0deg E of N Pixel scale = 2.28 arcsecond FL = 540mm James Yoder Date: 2023-10-21 Location: Chandler, AZ Config: C-11HD HyperStar V4 Avianovisk CLS-CDD (QHY12K) Exposure info: 21frames@2min Gain: 3200 Offset: 100</p>
<p>Jellyfish Nebula (IC 443) Config: C11-HD FR ZWO6200MC </p> <p>Type: Supernova Remnant Peak: Constellation: Gemini Coordinates: 06hr 16' 59" 22° 37' 29"</p> <p>Close Star: SAO-78297 (Calix) Catalog Objects: IC-443</p> <p>Imaging Window: 09:45 – 04:24 Transit: 01:01 79°</p>	<p style="text-align: center;">C11-HD: Focal Reducer</p> 
<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: 09:45 – 04:24 Transit: 01:01 79°</p>	<p style="text-align: center;">Primary Focus</p>  <p style="font-size: small; text-align: center;">Jellyfish nebula (IC 443) Constellation: Gemini James Yoder Location: Chandler, AZ Config: C11 Starizona LF Corrector QHY12K (QHY12K) Exposure info: 100frames@2min Gain: 3200 Offset: 100</p>

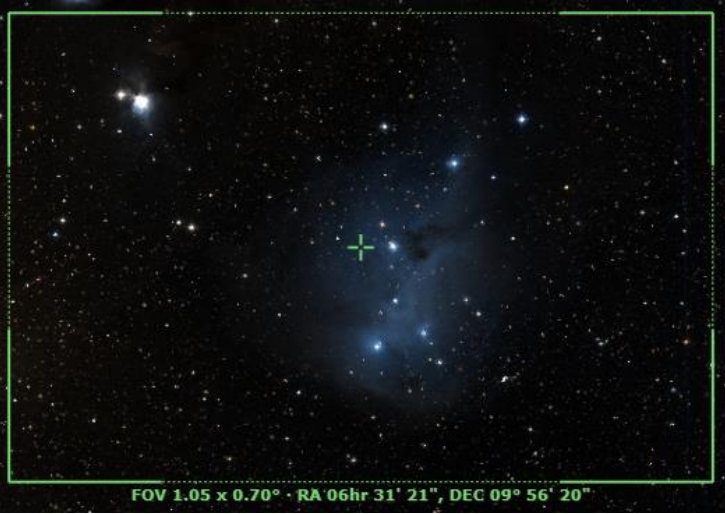


Prospective Imaging Objects – December

<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: *10:29 – 03:48 Transit: 01:05 44°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<p>SH 2-249 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: 09:49 – 04:30 Transit: 01:06 80°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 10:48 – 03:48 Transit: 01:14 62°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> 

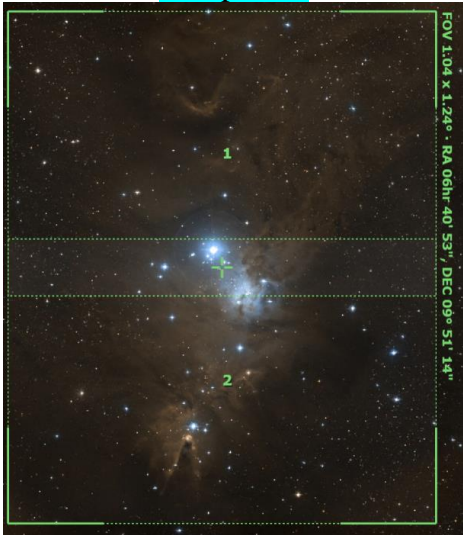
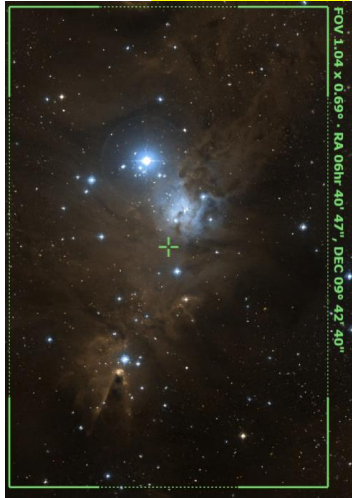

Prospective Imaging Objects – December

<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: 10:48 – 03:48 Transit: 01:14 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: 10:48 – 03:48 Transit: 01:14 62°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 10:30 – 04:06 Transit: 01:15 80°</p>	<p style="text-align: center;">C-11 HD: HyperStar v4</p> <p style="font-size: small; text-align: center;">FOV 3.80 x 2.53° - RA 06hr 36' 00", DEC 10° 16' 17"</p> 




Prospective Imaging Objects – December

<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: 10:30 – 04:06 Transit: 01:15 80°</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: 10:30 – 04:06 Transit: 01:15 80°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 
<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: 10:43 – 04:10 Transit: 01:23 65°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December

<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: 10:41 – 04:15 Transit: 01:24 67°</p>	<p>C-11 HD: Focal Reducer Composite!</p> 
<p>Christmas Tree & Cone Config: C11- HD FR ZWO6200MC </p> <p>Type: Diffuse Nebula Peak:</p> <p>Constellation: Monoceros</p> <p>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: 10:41 – 04:15 Transit: 01:24 67°</p>	<p>C-11 HD: Focal Reducer</p> 
<p>Christmas Tree Cluster (NGC 2264) Config: C1 LF ZWO6200MC </p> <p>Type: Diffuse Nebula Peak:</p> <p>Constellation: Monoceros</p> <p>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: 10:41 – 04:15 Transit: 01:24 67°</p>	<p>Primary Focus</p> 




Prospective Imaging Objects – December

<p>Christmas Tree & Cone Config: C6FR ZWO6200MC </p> <p>Type: Diffuse Nebula Peak: Constellation: Monoceros Coordinates: 06hr 40' 51.6" 09° 40' 25.2" Angle: 90° East</p> <p>Close Star: SAO-95912 (Alhena) Catalog Objects: NGC-2264/Sh 2-273</p> <p>Imaging Window: 10:41 – 04:15 Transit: 01:24 67°</p>	<p style="text-align: center;">C-6 HD: Focal Reducer</p>  <p style="font-size: small;">NGC-2264 (Cone & Christmas Tree Nebula) <small>Constellation: Monoceros [RA = 06h 40m 51.6s DEC = +09deg 40' 25.2"] Size = 55.0 x 36.7 arcmin Orientation: 270deg E of N Pixel scale = 0.667 arcsec/pixel FL = 1166mm</small></p> <p style="font-size: x-small; text-align: right;">John Vadev Date(s) 2024-01-26-27 Location: Chandler, AZ Config: C-6SE 0.63 Focal Reducer OPT Reducer Triad Ultra ZWO6200MC Exposure Info: 133.frm@2min Gain: 100 </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/Sh 2-273</p> <p>Imaging Window: 10:41 – 04:15 Transit: 01:24 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: *11:38 – 03:25 Transit: 01:30 36°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December

<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: *11:19 – 04:19 Transit: 01:46 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: *11:31 – 04:07 Transit: 01:48 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) Constellation: Monoceros RA = 07h 06m 17.4s DEC = -11deg 02' 27.2" Size = 710 x 140 pixels Orientation = 80deg E of N Pixel scale = 2.27x arcsecond (1.1x10mm) James Van Der Meer (2021-01-06, 10, 11, 15, 17) Location: Chandler, AZ Config: C-11HD HyperStar V4 / Optolong L-Extreme / QHY128c / Exposure: 6x6, 107Frames/Frame Gain: 1200 (10Sec, 180)</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: *11:31 – 04:07 Transit: 01:48 46°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 


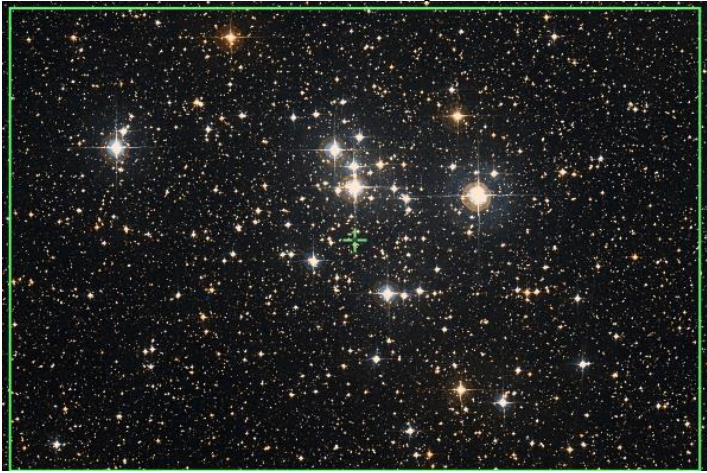

Prospective Imaging Objects – December

<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: *11:19 – 04:30 Transit: 01:53 56°</p>	<p style="text-align: center;">C-11 HD: Primary Focus x2</p>  <p style="font-size: small; text-align: center;">Planetary Nebula NGC-2346 <small>Constellation: Monoceros RA: 07h 09m 23.00s -00d 48' 22.00" Size: 21.7 x 17.1 pixels - Observed: 8kg E of N - (Pixel Size: 0.278 arcsec/pixel) - 2008mm Date/Time: 2024/11/06 11:19:43.1 Localtime: Canada 4.7 Config: C-11 HD Primary Focus 2x Zoom 4000 Focal Extra Camera ZWO6200MC Exposure: 30s - 163 Images/Frame @ 10000 ISO</small></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: 11:00 – 04:57 Transit: 01:55 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, UGC-3701</p> <p>Imaging Window: 11:00 – 04:57 Transit: 01:55 52°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 




Prospective Imaging Objects – December

<p>Thor's Helmet (NGC-2359) Config: C11HD ZWO6200MC </p> <p>Type: Diffuse Nebula Constellation: Canis Major Coordinates: 07h 18' 26.223" -13° 15' 29.563"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: NGC-2359/ Sh2-298/ LBN1041</p> <p>Imaging Window: *10:56 – 05:12 Transit: 02:02 43°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small; text-align: center;">Thor's Helmet (NGC 2359) Constellation: Canis Major</p> <p style="font-size: x-small; text-align: right;">James Yoder Direct 2023-11-01 Location: Chandler, AZ Config: C11 HD ZWO6200MC Filter: 001126 Exposure Info: 00min Gain: Gain: 3200 Offset: 100 </p>
<p>Candy Wrapper (NGC-2371) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula Constellation: Gemini Coordinates: 07° 25' 34" 29° 29' 18"</p> <p>Close Star: SAO-151881 (Sirius) Catalog Objects: NGC-2371</p> <p>Imaging Window: 10:41 – 05:44 Transit: 02:09 86°</p>	<p style="text-align: center;">C-11 HD: Primary Focus x2</p>  <p style="font-size: x-small; text-align: center;">Candy Wrapper (NGC-2371) Constellation: Gemini</p> <p style="font-size: x-small; text-align: right;">James Yoder Direct 2023-11-01 Location: Chandler, AZ Config: C11 HD ZWO6200MC Filter: 001126 Exposure Info: 00min Gain: Gain: 3200 Offset: 100 </p>
<p>Medusa Nebula (Abell 21) Config: C11HD ZWO6200MC </p> <p>Type: Planetary Nebula</p> <p>Constellation: Gemini Coordinates: 07h 29' 00" 13° 15' 00"</p> <p>Close Star: SAO-115756 (Procyon) Catalog Objects: Abell 21</p> <p>Imaging Window: 11:19 – 05:13 Transit: 02:13 70°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small; text-align: center;">Abell-21 (Medusa Nebula) Constellation: Gemini RA = 7h 29m 54.96s, DEC = 13deg 15' 20.8", Size = 38.7 x 26.1 arcmin Orientation: 0.8deg E of N Pixel scale = 0.579 arcsec/pixel FL=3720mm</p> <p style="font-size: x-small; text-align: right;">James Yoder Direct 2023-11-25, 26, 27, 28, 2023-12-02, 03 Location: Chandler, AZ Config: C11 HD ZWO6200MC Filter: 001126 Exposure Info: 00min Gain: Gain: 3200 Offset: 100 </p>

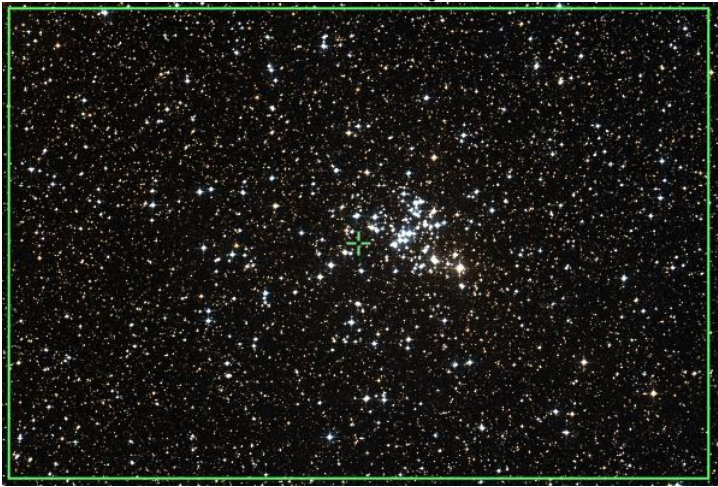


Prospective Imaging Objects – December

<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: 11:00 – 05:32 Transit: 02:13 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 (OPT) Triad Ultra ZWO6200MC Exposure Info: 144 frames/Stack Gain: 100 Offset: 50 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 F1 = 2000mm </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: *11:15 – 05:28 Transit: 02:20 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: 10:52 – 05:55 Transit: 02:20 58°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">Galaxy NGC-2403 (Calwell 7) James Yoder Date(s) 2020.12.09 Location: Chandler, AZ Constellation: Camelopardalis Config: C-11 HD (OPT) Triad Ultra ZWO6200MC Exposure Info: 144 frames/Stack Gain: 100 Offset: 50 RA = 07h 36m 51.5s DEC = +65deg 36' 06.0" Size = 18.5 x 13.9 arcmin Orientation: 0.5deg E of N Pixel scale = 0.278 arcsec/pixel F1 = 2000mm </p>




Prospective Imaging Objects – December

<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: 10:41 – 05:55 Transit: 02:22 84°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="text-align: center;"><small>Intergalactic Wanderer (NGC-2419)</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: *11:23 – 05:28 Transit: 02:25 42°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="text-align: center;"><small>NGC-2438</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: *11:42 – 05:12 Transit: 02:25 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

<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: *12:17 – 04:38 Transit: 02:28 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: 01:26 – 04:35 Transit: 02:57 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: 12:59 – 05:43 Transit: 03:17 41°</p>	<p style="text-align: center;">C-11 HD: Primary Focus x2</p> 




Prospective Imaging Objects – December

<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: 12:14 – 05:55 Transit: 03:23 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: 12:45 – 05:55 Transit: 03:35 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: 11:56 – 05:55 Transit: 03:39 65°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 


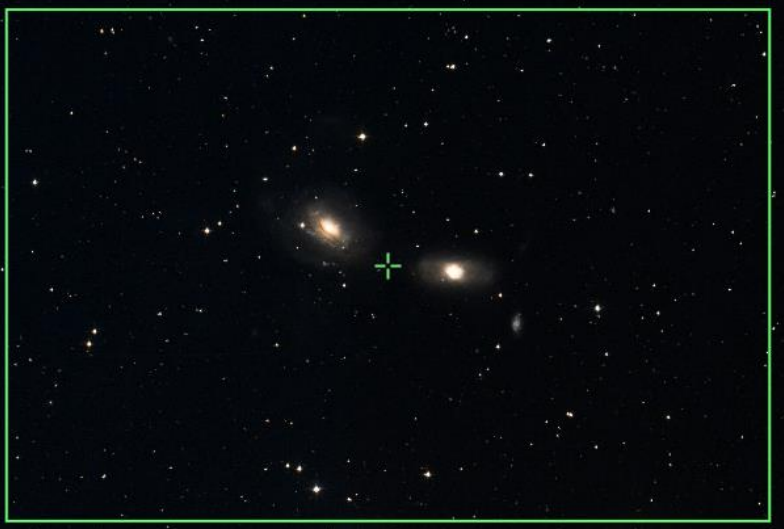

Prospective Imaging Objects – December

<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: 01:02 – 05:55 Transit: 04:15 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: 01:29 – 05:55 Transit: 04:39 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(s) 2020.12.05, 2020.12.07 Location: Chandler, AZ Config: C-11HD HyperStar v4 1.2Pa-03, C13-SCD GH1 D6 Exposure Info: 9/50ms@f800, 240ms@f800 Gain: 5200 OIBit: 180</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: 01:29 – 05:55 Transit: 04:39 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" · 0.39"/px</small></p>




Prospective Imaging Objects – December

<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: 01:25 – 05:55 Transit: 04:39 54°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">M-081 Bode's Galaxy James Yoder 2015.11.14</p>
<p>Cigar Galaxy (M-82) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy 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: 01:29 – 05:55 Transit: 04:39 54°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small;">M-082 Cigar Galaxy James Yoder 2017.03.24</p>
<p>Spindel Galaxy (NGC-3115) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Constellation: Sextans Coordinates: 10h 05' 21" -07° 47' 09"</p> <p>Close Star: SAO-98967 (Regulus) Catalog Objects: NGC-3115</p> <p>Imaging Window: *11:43 – 04:48 Transit: 02:20 49°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: x-small;">Spindle Galaxy (NGC-3115) James Yoder 2017.03.24</p>




Prospective Imaging Objects – December

<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: 02:01 – 05:55 Transit: 04:51 69°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small; text-align: center;">Dwarf Galaxy Leo I (UGC-5470) Constellation: Leo (Leo I) RA: 10h 08m 27.00s Dec: 12d 19m 49.00s Mag: 11.75 Dist: 10.7 Mpc (35.0 Mly) Ref: SDSS DR12</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: 02:37 – 05:55 Transit: 04:57 60°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small; text-align: center;">NGC 3166 & NGC 3169 Constellation: Sextans RA: 10h 14m 01.00s Dec: 03d 25m 51.00s Mag: 11.75 Dist: 10.7 Mpc (35.0 Mly) Ref: SDSS DR12</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: 01:47 – 05:55 Transit: 05:01 79°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="font-size: small; text-align: center;">Hickson-44 Galaxy Cluster (Amp-316) Constellation: Leo RA: 10h 17m 57.00s Dec: 21d 49m 11.00s Mag: 11.75 Dist: 10.7 Mpc (35.0 Mly) Ref: SDSS DR12</p>




Prospective Imaging Objects – December

<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: 01:19 – 05:55 Transit: 05:01 82°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="text-align: center;"><small>Barred Spiral Galaxy NGC-3184 Copyright © 2024 James Foster</small></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: 01:57 – 05:55 Transit: 05:06 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: *03:02 – 05:55 Transit: 05:08 38°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p>  <p style="text-align: center;"><small>NGC-3242 (Ghost of Jupiter) Constellation: Hydra RA = 10h 24m 44.7s, DEC = -18deg 38' 31.1" Size = 18.5 x 13.9 arcmin Orientation: -0.6deg E of N Pixel scale = 0.278 arcsec/pixel FL = 2000mm James Foster Dates: 2020 12 09 - 10 Location: Chandler, AZ Config: C-11 HD XOPT Triad Ultra ZWO6200MC Exposure Info: 36 frames @ 2min Gain: 100 OffSet: 50 </small></p>

Prospective Imaging Objects – December

<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: 01:55 – 05:55 Transit: 05:11 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: 01:55 – 05:55 Transit: 05:11 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 Dinos 2022 04 01 - 2020 04 08 Location: Chandler, AZ Config: C-11 HD Baader Skyglow QHY128c Constellation: Ursa Major RA = 10h 28m 41.9s, DEC = +68deg 26' 48.2" Size = 32.3 x 23.4 arcmin Orientation: 0.020deg E of N Pixel scale = 0.452 arcsec/pixel FL=2724mm Exposure Info: 2000fms@4mm Gain: 3200 Offset: 180</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: 02:41 – 05:55 Transit: 05:30 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

<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: 12:04 – 05:44 Transit: 02:58 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 Photo: 10h 45m 20.0s, 11d 44' 30.0" (Mag 4.2/7.7) Size = 79.7 x 49.9 arcsec (Pixel scale = 0.179 arcsec/pixel) James Yoder - 2024-04-27 - Location: Mountain View, CA Telescope: C-11 HD/700mm F8.3 Exposure: 3x 300sec/Frame (Gain: 520e) Offset: 180</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: 02:40 – 05:55 Transit: 05:31 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>
<p>Ambartsumian's Knot et al. (NGC-3561, 3558, 3553, 3550, etc.) Config: C11HD ZWO6200MC </p> <p>Type: Galaxy Cluster</p> <p>Constellation: Ursa Major Coordinates: 11h 10' 43" 28° 41' 41"</p> <p>Close Star: SAO-81727 (Zosma) Catalog Objects: NGC-3561</p> <p>Imaging Window: 02:28 – 05:55 Transit: 05:54 85°</p>	<p style="text-align: center;">C-11 HD: Primary Focus</p> 

Prospective Imaging Objects – December

M-108 & M-97

Config: |C11HD|ZWO6200MC|

Type: **Irregular Galaxy & Planetary Nebula**

Constellation: **Ursa Major**

Coordinates:
11h 12' 49"
55° 20' 57"

Close Star: **SAO-27876** (Merak)

Catalog Objects: [M-108](#)/NGC-3555

Imaging Window: **02:09 – 05:55**

Transit: **05:54 | 68°**

C-11 HD: HyperStar v4



M-108 (NGC-3556) and Owl Nebula (M-97, NGC-3587)
 Constellation: Ursa Major
[RA = 11h 12m 51.217s DEC = +55deg 21' 46.196"] Size = 1.91 x 1.28 deg (Pixel scale = 2.28 arcsecond)

James Yoder 2020 04 03
 Config: |C-11HD| HyperStar V4 | Astronomik CLS-CCD QHY129c |
 Exposure Info: |147frames| 1min | Gain: 3200 | OffSet: 180 |
 Location: Chandler, AZ

M-108 (NGC-3556)

Config: |C11HD|ZWO6200MC|

Type: **Irregular Galaxy**

Constellation: **Ursa Major**

Coordinates:
11h 11' 29"
55° 40' 22"

Close Star: **SAO-27876** (Merak)

Catalog Objects: [M-108](#)/NGC-3555

Imaging Window: **02:09 – 05:55**

Transit: **05:54 | 68°**

C-11 HD: Primary Focus



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Page

Prospective Imaging Objects – December

Imaging Summary November 01, 2024

Astronomical Dusk = 06:59

Astronomical Dawn = 05:23

HyperStar: Nebula

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
HyperStar	Nebula	Nebula	SH2-185	06:50 – 11:30	07:45	07	Cassiopeia: Gamma Cassiopeiae Nebula
HyperStar	Nebula	Neb, OC	NGC-457	06:50 – 11:54	08:04	09	Cassiopeia: Open Cluster and Nebula
HyperStar	Nebula	Nebula	IC-1848	06:50 – 01:02	09:17	13	Comp4! Cassiopeia: Heart & Soul Nebula
HyperStar	Nebula	Nebula	IC-1805	06:50 – 01:02	09:17	14	Cassiopeia: Heart Nebula
HyperStar	Nebula	Nebula	IC-1848	06:50 – 01:23	09:36	16	Cassiopeia: Soul Nebula
HyperStar	Nebula	Nebula	NGC-1499	07:09 – 02:32	10:47	19	Perseus: California Nebula
HyperStar	Nebula	Nebula	IC-405	08:26 – 03:43	12:01	23	Auriga: Flaming Star Nebula
HyperStar	Nebula	Nebula	Orion Cmpx	10:46 – 01:59	12:19	27	Comp6! Orion: Orion Complex of objects
HyperStar	Nebula	Nebula	M-42	10:46 – 01:59	12:19	28	Orion: Orion and Running Man Nebula
HyperStar	Nebula	Nebula	M-42	10:46 – 01:59	12:19	28	Orion: Orion and Running Man Nebula
HyperStar	Nebula	Nebula	SH 2-240	08:59 – 03:58	12:25	30	Comp2! Taurus: Simeis 147
HyperStar	Nebula	Nebula	SH 2-240	08:59 – 03:58	12:25	30	Taurus: Simeis 147
HyperStar	Nebula	Nebula	NGC-2024, B-33	10:30 – 02:28	12:25	31	Orion: Horsehead and Flame Nebula
HyperStar	Nebula	Nebula	IC-2162, SH2-261	09:52 – 03:59	12:52	37	Orion: Two Nebulas
HyperStar	Nebula	Nebula	IC-443	09:45 – 04:24	01:01	40	Gemini: Jellyfish Nebula
HyperStar	Nebula	Nebula	NGC-2237	10:48 – 03:48	01:14	41	Monoceros: Rosett Nebula
HyperStar	Nebula	Nebula	IC-2169	10:30 – 04:06	01:15	42	Monoceros: DN & Nebulas
HyperStar	Nebula	Nebula	IC-2177	*11:31-04:07	01:48	46	Rot90° Monoceros: Seagull Nebula

Prospective Imaging Objects – December

Imaging Summary November 01, 2024

Astronomical Dusk = 06:59

Astronomical Dawn = 05:23

HyperStar: Broad Spectrum

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
HyperStar	Broad Spectrum	Galaxies	NGC-147	06:50 – 11:10	07:18	02	Cassiopeia: Galaxy Pair
HyperStar	Broad Spectrum	Galaxy	M-31	06:50 – 11:16	07:37	04	Andromeda: Andromeda Galaxy
HyperStar	Broad Spectrum	Gal, GC	NGC-288	*06:50 -09:28	07:32	06	Sculptor: NGC-288 & NGC-253
HyperStar	Broad Spectrum	Galaxy	M-33	06:50 – 11:54	08:18	10	Triangulum: Triangulum Galaxy
HyperStar	Broad Spectrum	OC	NGC-869	06:50 – 12:54	09:03	12	Perseus: Hand chi Persei
HyperStar	Broad Spectrum	OC, BN	M-45	07:11 – 01:56	10:30	18	Taurus: Pleiades
HyperStar	Broad Spectrum	OC	Mel-25	08:10 – 02:24	11:14	21	Taurus: Hyades
HyperStar	Broad Spectrum	DN	IC-2118	*09:13-02:20	11:46	21	Eridanus: Witch Head Nebula
HyperStar	Broad Spectrum	DN	NGC-1788	10:04 – 01:44	11:51	22	Orion: Foxface Nebula
HyperStar	Broad Spectrum	DN, N	LDN-1622 R1	10:25 – 02:58	12:38	34	Comp2! Orion: DN Band
HyperStar	Broad Spectrum	DN, N	LDN-1622 R2	10:25 – 02:58	12:38	35	Orion: DN Band
HyperStar	Broad Spectrum	DN, N	LDN-1622 R3	10:25 – 02:58	12:38	35	Orion: DN Band
HyperStar	Broad Spectrum	OC	NGC-2632	12:14 – 05:55	03:23	52	Cancer: Beehive Cluster
HyperStar	Broad Spectrum	Galaxies	M-81 & M-82	01:29 – 05:55	04:39	53	Ursa Major: Bode's Cigar
HyperStar	Broad Spectrum	Galaxies	2574 Group	01:55 – 05:55	05:11	57	Leo: Galaxy Group 2574
HyperStar	Broad Spectrum	Galaxies	Leo Group	02:41 – 05:55	05:30	57	Leo: Leo Galaxy Group
HyperStar	Broad Spectrum	G, PN	M-108 & M-97	02:09 – 05:55	05:54	59	Ursa Major: Galaxy & Planetary Nebula

Prospective Imaging Objects – December

Imaging Summary December 15

Astronomical Dusk = 06:50

Astronomical Dawn = 05:55

Focal Reducer: Nebula

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Focal Reducer	Nebula	Neb, Gx	NGC-246	*06:50-10:22	07:32	05	Cetus: Planetary and two Galaxies
Focal Reducer	Nebula	Nebula	NGC-281	06:50 – 11:28	07:37	07	Cassiopeia: Pack Man Nebula
Focal Reducer	Nebula	Nebula	IC-1795	06:50 – 12:54	09:10	13	Cassiopeia: Fish Head Nebula
Focal Reducer	Nebula	Nebula	IC-1805	06:50 – 01:02	09:17	14	Cassiopeia: Heart Nebula
Focal Reducer	Nebula	Nebula	IC-405	08:26 – 03:43	12:01	23	Auriga: Flaming Star Nebula
Focal Reducer	Nebula	Nebula	IC-410	08:31 – 03:47	12:06	24	Auriga: Tadpoles
Focal Reducer	Nebula	Nebula	M-77, NGC1055	08:36 – 03:54	12:12	25	Comp2! Auriga: The Spider and the Fly
Focal Reducer	Nebula	Nebula	NGC-2024	10:30 – 02:28	12:25	31	Orion: Flame Nebula
Focal Reducer	Nebula	Nebula	NGC-2170	11:26 – 02:24	12:51	37	Monoceros: Angel Nebula
Focal Reducer	Nebula	Nebula	SH 2-261	09:52 – 03:59	12:52	38	Orion: Lower's Nebula
Focal Reducer	Nebula	Nebula	NGC-2174	09:42 – 04:12	12:53	39	Orion: Monkey Head Nebula
Focal Reducer	Nebula	Nebula	IC-443	09:45 - 04:24	01:01	40	Gemini: Jellyfish Nebula
Focal Reducer	Nebula	Nebula	NGC-2237	10:48 – 03:48	01:14	42	Monoceros: Rosett Nebula Core
Focal Reducer	Nebula	Nebula	NGC-2264	10:41 – 04:15	01:24	44	Comp2! Monoceros: Xmas Tree and Cone Nebula
Focal Reducer	Nebula	Nebula	NGC-2264	10:41 – 04:15	01:24	44	Rot! Monoceros: Xmas Tree and Cone Nebula
Focal Reducer	Nebula	Nebula	NGC-2264	10:41 – 04:15	01:24	45	Monoceros: Xmas Tree and Cone Nebula

Prospective Imaging Objects – December

Imaging Summary December 15

Astronomical Dusk = 06:50

Astronomical Dawn = 05:55

Focal Reducer: Broad Spectrum

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Focal Reducer	Broad Spectrum	Galaxies	NGC-147	06:50 – 11:10	07:18	03	Copmp2! Cassiopeia: Galaxy Pair NGC-147 & 185
Focal Reducer	Broad Spectrum	OC	NGC-188	*06:50-11:46	07:32	07	Cepheus: Open Cluster NGC-188
Focal Reducer	Broad Spectrum	Galaxy	M-33	06:50 – 11:54	08:18	11	Rot90 Triangulum: Triangulum Galaxy
Focal Reducer	Broad Spectrum	Galaxies	M-77	07:21 – 11:38	09:27	15	Cetus: Galaxies M-77 & NGC-1055
Focal Reducer	Broad Spectrum	DN, BN	NGC-1788	10:04 – 01:44	11:51	22	Orion: Foxface Nebula
Focal Reducer	Broad Spectrum	DN, BN	M-78	10:25 – 02:43	12:31	33	Comp2! Orion: Dark Nebula
Focal Reducer	Broad Spectrum	DN, BN	M-78	10:25 – 02:43	12:31	33	Orion: Dark Nebula
Focal Reducer	Broad Spectrum	DN	LDN-1622	10:25 – 02:58	12:38	36	Comp2! Rot90° Orion: Dark Nebula
Focal Reducer	Broad Spectrum	DN	LDN-1622	10:25 – 02:58	12:38	36	Orion: Dark Nebula
Focal Reducer	Broad Spectrum	OC	M-35, NGC-2158	09:33 – 04:19	12:53	38	Gemini: Open Cluster Pair
Focal Reducer	Broad Spectrum	BN	IC-2169	10:30 – 04:06	01:15	43	Monoceros: Reflection Nebula
Focal Reducer	Broad Spectrum	Galaxies	UGC-3697	11:00 – 04:57	01:55	47	Camelopardalis: Integral Sign Galaxy
Focal Reducer	Broad Spectrum	Galaxies	M-81 & M-82	01:29 – 05:55	04:39	53	Ursa Major: Bode's Cigar
Focal Reducer	Broad Spectrum	Galaxies	M-95 & M-96	12:04 – 05:44	02:58	58	Leo: Galaxy Pair M-95, M-96

Prospective Imaging Objects – December

Imaging Summary December 15

Astronomical Dusk = 06:50

Astronomical Dawn = 05:55

Primary Focus: Nebula

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Nebula	PN	NGC-40	06:50 – 09:52	06:58	02	Cepheus: Bow-Tie Nebula
Primary Focus	Nebula	PN	NGC-246	*06:50-10:22	07:32	05	Cetus: Skull Nebula
Primary Focus	Nebula	Nebula	SH2-185	06:50 – 11:30	07:45	08	Cassiopeia: Gamma Cassiopeiae Nebula
Primary Focus	Nebula	Nebula	SH2-188	06:50 – 12:04	08:15	10	Cassiopeia: Firefox Nebula
Primary Focus	Nebula	PN	M-76	06:50 – 12:20	08:27	11	Perseus: Little Dumbbell Nebula
Primary Focus	Nebula	Nebula	IC-1805	06:50 – 01:02	09:17	14	Cassiopeia: Heart Nebula Core
Primary Focus	Nebula	Nebula	IC-1848	06:50 – 01:23	09:36	16	Cassiopeia: Soul Nebula Core
Primary Focus	Nebula	Nebula	NGC-1333	06:50 – 01:51	10:13	17	Perseus: Bright Nebula
Primary Focus	Nebula	Nebula	NGC-1360	*08:30-12:13	10:17	17	Fornax: Egg shaped Nebula
Primary Focus	Nebula	Nebula	IC-348	06:56 – 02:07	10:29	18	Perseus: Bright Nebula
Primary Focus	Nebula	Nebula	M-45	07:11 – 01:56	10:30	19	Taurus: Pleiades
Primary Focus	Nebula	Nebula	NGC-1501	07:11 – 02:37	10:51	19	Camelopardalis: Oyster Nebula
Primary Focus	Nebula	Nebula	NGC-1514	07:22 – 10:53	10:53	20	Taurus: Crystal Ball Nebula
Primary Focus	Nebula	Nebula	NGC-1535	*08:57-01:07	10:58	20	Eridanus: Cleopatra's Eye
Primary Focus	Nebula	Nebula	NGC-1555	07:56 – 02:22	11:06	20	Taurus: Hind's Variable Nebula
Primary Focus	Nebula	Nebula	NGC-1579	07:37 – 02:57	11:14	21	Perseus: Trifid of the North
Primary Focus	Nebula	Nebula	IC-2118	*09:13-02:20	11:46	22	Eridanus: Witch Head Nebula
Primary Focus	Nebula	Nebula	NGC-1788	10:04 – 01:44	11:51	23	Orion: Foxface Nebula
Primary Focus	Nebula	Nebula	IC-405	08:26 – 03:43	12:01	24	Auriga: Flaming Star Nebula
Primary Focus	Nebula	Nebula	IC-410	08:31 – 03:47	12:06	24	Auriga: Tadpoles
Primary Focus	Nebula	Nebula	IC-418	*10:06-02:16	12:11	25	Lepus: Spirograph Nebula
Primary Focus	Nebula	Nebula	IC-417	08:36 – 03:54	12:12	26	Auriga: The Spider
Primary Focus	Nebula	Nebula	NGC-1931	08:40 – 03:57	12:15	26	Auriga: The Fly
Primary Focus	Nebula	Nebula	M-1	09:03 – 03:40	12:18	27	Taurus: Crab Nebula

Prospective Imaging Objects – December

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Nebula	Nebula	M-42	10:46 – 01:59	12:19	28	Orion: The Orion Nebula
Primary Focus	Nebula	Nebula	NGC-1977	10:42 – 02:03	12:19	29	Orion: Running Man Nebula (C-6)
Primary Focus	Nebula	Nebula	NGC-1977	10:42 – 02:03	12:19	29	Orion: Running Man Nebula
Primary Focus	Nebula	Nebula	NGC-2024	10:30 -02:28	12:25	31	Orion: Flame Nebula
Primary Focus	Nebula	Nebula	B-33	10:33 – 02:23	12:25	32	Orion: Horsehead Nebula
Primary Focus	Nebula	Nebula	NGC-2022	09:45 – 03:14	12:26	32	Orion: Planetary Nebula
Primary Focus	Nebula	Nebula	NGC-2170	11:26 – 02:24	12:51	37	Monoceros: Angle Nebula
Primary Focus	Nebula	Nebula	SH 2-261	09:52 – 03:59	12:52	38	Orion: Lower’s Nebula
Primary Focus	Nebula	Nebula	NGC-2174	09:42 – 04:12	12:53	39	Orion: Monkey Head Nebula
Primary Focus	Nebula	Nebula	IC-2162	09:51 – 04:09	12:57	39	Orion: Nebula
Primary Focus	Nebula	Nebula	IC-443	09:45 – 04:24	01:01	40	Gemini: Jellyfish Nebula
Primary Focus	Nebula	Nebula	IC-2165	*10:29-03:48	01:05	41	Canis Major: Small Planetary Nebula
Primary Focus	Nebula	Nebula	SH 2-249	09:49 – 04:30	901:06	41	Gemini: Nebula
Primary Focus	Nebula	Nebula	NGC-2237	10:48 – 03:48	01:14	42	Monoceros: Rosette Nebula Core
Primary Focus	Nebula	Nebula	NGC-2261	10:43 – 04:10	01:23	43	Monoceros: Hubble’s Variable Nebula
Primary Focus	Nebula	Nebula	NGC-2264	10:41 – 04:15	01:24	44	Monoceros: Xmas Tree Cluster
Primary Focus	Nebula	Nebula	NGC-2264	10:41 – 04:15	01:24	45	Monoceros: Cone Nebula
Primary Focus	Nebula	Nebula	IC-2177	*11:31-04:07	01:48	46	Monoceros: Seagull Nebula head
Primary Focus	Nebula	Nebula	NGC-2346	*11:19-04:30	01:53	47	Monoceros: Hourglass Nebula
Primary Focus	Nebula	Nebula	NGC-2359	*10:56-05:12	02:02	48	Canis Major: Thor’s Helmet
Primary Focus	Nebula	Nebula	NGC-2371	10:41 – 05:44	02:09	48	Gemini: Candy Wrapper Nebula
Primary Focus	Nebula	Nebula	Abell-21	11:19 – 05:13	02:13	48	Gemini: Medusa Nebula
Primary Focus	Nebula	Nebula	NGC-2392	11:00 – 05:32	02:13	49	Gemini: Eskimo Nebula
Primary Focus	Nebula	Nebula	M-46	*11:23-05:28	02:25	50	Puppis: Open Cluster and Planetary
Primary Focus	Nebula	Nebula	NGC-2440	*11:42-05:12	02:25	50	Puppis: Bow-Tie Nebula
Primary Focus	Nebula	PN	NGC-2610	12:59 – 05:43	03:17	51	Hydra: NGC-2610 Small PN
Primary Focus	Nebula	PN	NGC-3242	*03:02-05:55	05:08	56	Hydra: Ghost of Jupiter
Primary Focus	Nebula						
Primary Focus	Nebula						

Prospective Imaging Objects – December

Imaging Summary December 15

Astronomical Dusk = 06:50

Astronomical Dawn = 05:55

Primary Focus: Broad Spectrum

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Broad Spectrum	Galaxies	NGC 67-72	06:50 – 10:38	07:03	02	Andromeda: Andromeda Galaxy Group
Primary Focus	Broad Spectrum	Galaxy	NGC-147	06:50 – 11:10	07:18	03	Cassiopeia: Dwarf Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-185	06:50 – 11:16	07:24	03	Cassiopeia: Dwarf Spheroidal Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-110	06:50 – 11:14	07:25	04	Andromeda: Elliptical Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-32	06:50 – 11:16	07:27	04	Andromeda: Companion to M-31
Primary Focus	Broad Spectrum	Galaxy	NGC-247	*06:50-10:06	07:32	05	Cetus: Needle's Eye Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-253	*06:50-09:28	07:32	06	Sculptor: Sculptor Galaxy
Primary Focus	Broad Spectrum	Globular	NGC-288	*06:50-09:20	07:37	06	Sculptor: Med Globular Cluster
Primary Focus	Broad Spectrum	Galaxy	IC-1613	06:50 – 10:10	07:49	08	Cetus: Irregular Dwarf Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-404	06:50 – 11:37	07:54	08	Andromeda: Mirachs Ghost
Primary Focus	Broad Spectrum	OC	NGC-457	06:50 – 11:54	08:04	09	Cassiopeia: Owl Cluster
Primary Focus	Broad Spectrum	Galaxies	Arp-133	06:50 – 10:14	08:10	09	Cetus: Minkowski's Object
Primary Focus	Broad Spectrum	OC	M-103	06:50 – 12:04	08:18	10	Cassiopeia: Open Cluster NGC-581
Primary Focus	Broad Spectrum	Galaxy	M-74	06:50 – 11:28	08:21	11	Pisces: Med Face On Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-772	06:50 – 11:58	08:44	12	Aries: Nautilus Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-891	06:50 – 12:57	09:07	12	Andromeda: Edge On Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-925	06:50 – 12:52	09:12	13	Triangulum: Face on Galaxy PGC-9332
Primary Focus	Broad Spectrum	Galaxy	NGC-1055	07:18 - 11:39	09:26	15	Cetus: Edge On galaxy
Primary Focus	Broad Spectrum	OC	M-34	06:50 – 01:16	09:26	15	Perseus: Open Cluster NGC-1039
Primary Focus	Broad Spectrum	Galaxy	M-77	07:21 – 11:38	09:27	16	Cetus: Galaxy NGC-1068
Primary Focus	Broad Spectrum	Galaxies	Abell-426	06:50 – 01:51	10:04	17	Perseus: Perseus Galaxy Cluster
Primary Focus	Broad Spectrum	Galaxy	IC-342	07:12 – 01:56	10:31	18	Camelopardalis: Large Face-On
Primary Focus	Broad Spectrum	Globular	M-79	*10:10-02:16	12:11	25	Lepus: Med Globular

Prospective Imaging Objects – December

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Broad Spectrum	OC	M-38	08:35 – 03:56	12:12	26	Auriga: Starfish Cluster
Primary Focus	Broad Spectrum	OC	M-36	08:45 – 04:02	12:20	29	Auriga: Open Star Cluster NGC-1960
Primary Focus	Broad Spectrum	Galaxy	NGC-1961	09:14 – 03:45	12:26	32	Camelopardalis: Galaxies
Primary Focus	Broad Spectrum	DN	M-78	10:25 – 02:43	12:31	34	Orion: Dark and Bright Nebula
Primary Focus	Broad Spectrum	OC	M-37	09:03 – 04:16	12:36	34	Auriga: Salt and Pepper Cluster
Primary Focus	Broad Spectrum	DN	LDN-1622	10:25 – 02:58	12:38	36	Orion: Dark Nebula
Primary Focus	Broad Spectrum	RN	IC-2169	10:30 – 04:06	01:15	43	Monoceros: Reflection Nebula
Primary Focus	Broad Spectrum	OC	M-41	*11:38-03:25	01:30	45	Canis Major: Open Star Cluster NGC-2287
Primary Focus	Broad Spectrum	OC	M-50	*11:19-04:19	01:46	46	Monoceros: Open Star Cluster NGC-2323
Primary Focus	Broad Spectrum	Galaxy	UGC-3697	11:00 – 04:57	01:55	47	Camelopardalis: Galaxy Cluster
Primary Focus	Broad Spectrum	OC	M-47	*11:15-05:28	02:20	49	Puppis: Open Cluster NGC-2422
Primary Focus	Broad Spectrum	Galaxy	NGC-2403	10:52 – 05:55	02:20	49	Camelopardalis: Med Barred Spiral Galaxy
Primary Focus	Broad Spectrum	GC	NGC-2419	10:41 – 05:55	02:22	50	Lynx: Intergalactic Wanderer
Primary Focus	Broad Spectrum	OC	M-93	*12:17-04:38	02:28	51	Puppis: Butterfly Cluster
Primary Focus	Broad Spectrum	OC	M-48	01:26 – 04:35	02:57	51	Hydra: M-48 (NGC-2548)
Primary Focus	Broad Spectrum	OC	M-67	12:45 – 05:55	03:35	52	Cancer: M-67 (NGC-2682)
Primary Focus	Broad Spectrum	Galaxy	NGC-2685	11:56 – 05:55	03:39	52	Ursa Major: Helix Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-2903	01:02 – 05:55	04:15	53	Leo: Med Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-81	01:25 – 05:55	04:39	54	Ursa Major: Bode's Nebula
Primary Focus	Broad Spectrum	Galaxy	M-82	01:29 – 05:55	04:39	54	Ursa Major: Cigar Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-3115	*11:43-04:48	02:20	54	Sextans: Spindel Galaxy
Primary Focus	Broad Spectrum	Galaxy	UGC-5470	02:01 – 05:55	04:51	55	Leo: Powder Keg Galaxy
Primary Focus	Broad Spectrum	Galaxies	NGC-3166, 3169	02:37 – 05:55	04:57	55	Sextans: Galaxy Pair
Primary Focus	Broad Spectrum	Galaxies	Hickson 44	01:47 – 05:55	05:01	55	Leo: Galaxy Cluster
Primary Focus	Broad Spectrum	Galaxy	NGC-3184	01:19 – 05:55	05:01	56	Ursa Major: Face On galaxy
Primary Focus	Broad Spectrum	Galaxies	NGC 3227, 3226	01:57 – 05:55	05:06	56	Leo: Interacting galaxy pair
Primary Focus	Broad Spectrum	Galaxy	IC-2574	01:55 – 05:55	05:11	57	Leo: Coddington's Nebula
Primary Focus	Broad Spectrum	Galaxies	Leo Trio 2	02:40 – 05:55	05:31	58	Leo: NGC-3379, 3384, 3389

Prospective Imaging Objects – December

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Broad Spectrum	Galaxies	NGC-3561 et. El.	02:28 – 05:55	05:54	58	Ursa Major: Ambartsumian’s Knot
Primary Focus	Broad Spectrum	Galaxy	M-108	02:09 – 05:55	05:54	59	Ursa Major: Med Galaxy NGC-3556