

Prospective Imaging Objects – May

Astronomical Data

Sunrise	Sunset	Astronomical Dusk	Astronomical Dawn	Imaging	Data Date
05:57am	07:58 pm	08:57 pm	03:51 am	06:54	May 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



- 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 – May

M-98 (NGC-4192) Config: C11HD ZWO6200MC Type: Barred Spiral Galaxy Constellation: Coma Berenices Coordinates: 12h 13' 48" 14° 53' 58" Close Star: SAO-99809 (Denebola) Catalog Objects: M-98/NGC-4192 Imaging Window: 08:57 – 12:07 Transit: 09:03 72°	C-11 HD: Primary Focus 
NGC-4236 (UGC 7306) Config: C11HD ZWO6200MC Type: Galaxy Constellation: Draco Coordinates: 12h 16' 42" 69° 28' 00" Close Star: SAO-28553 (Alioth) Catalog Objects: NGC-4236/UGC-7306 Imaging Window: 08:57 – 12:23 Transit: 09:06 54°	C-11 HD: Primary Focus 
Silver Needle (NGC-4244) Config: C11HD ZWO6200MC Type: Galaxy Constellation: Canes Venatici Coordinates: 12h 17' 30" 37° 48' 28" Close Star: SAO-99809 (Denebola) Catalog Objects: NGC-4244/UGC-7322 Imaging Window: 08:57 – 12:52 Transit: 09:06 86°	C-11 HD: Primary Focus 

Prospective Imaging Objects – May

St. Katherines Wheel

(M99/NGC4254)

Config: |C11HD|ZWO6200MC|

Type: **Spiral Galaxy**

Constellation: Coma Berenices

Coordinates:

12h 18' 49"

14° 25' 03"

Close Star: **SAO-99809** (Denebola)

Catalog Objects: [M-99](#)/NGC-4254

Imaging Window: **08:57 – 12:11**Transit: **09:08** | **71°**

C-11 HD: Primary Focus



Galaxy Group 106

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

ZWO6200MC

Type: **Galaxy Group**

Constellation: Canes Venatici

Coordinates:

12h 17' 12"

47° 13' 33"

Close Star: **SAO-28179** (Phecda)

Catalog Objects: [M-106](#), NGC 4248,
4217, 4232, 4331

Imaging Window: **08:57 – 01:00**Transit: **09:08** | **76°**

C-11 HD: HyperStar v4



M-106(NGC-4258)

Config: |C11-

HD|FR|ZWO6200MC|

Type: **Galaxy Group**

Constellation: Canes Venatici

Coordinates:

12h 17' 12"

47° 13' 33"

Close Star: **SAO-28179** (Phecda)

Catalog Objects: [M-106](#), NGC 4248,
4217, 4232, 4331

Imaging Window: **08:57 – 01:00**

Transit: 09:08 | 76°

C-11 HD: Focal Reducer



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M-61 (NGC4303) Config: C11HD ZWO6200MC Type: Face-On Spiral Galaxy Constellation: Virgo Coordinates: 12h 21' 55" 04° 31' 28" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-61/NGC-4303, NGC-4292, NGC-4301 Imaging Window: 08:57 – 11:42 Transit: 09:11 61°	C-11 HD: Primary Focus 
Winnecke 4(M-40) Config: C11HD ZWO6200MC Type: Galaxy Cluster Constellation: Ursa Major Coordinates: 12h 21' 22" 58° 03' 05" Close Star: SAO-28179 (Phecda) Catalog Objects: M-40, NGC-4290, NGC-4284 Imaging Window: 08:57 – 01:01 Transit: 09:11 65°	C-11 HD: Primary Focus 
M-100(NGC-4303) HD FR ZWO6200MC Type: Face-On Spiral Galaxy Constellation: Coma Berenices Coordinates: 12h 22' 28" 15° 42' 40" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-100/NGC-4321, NGC-4312, 4328, 4322, UGC-7425, IC-783A, Imaging Window: 08:57 – 12:19 Transit: 09:12 72°	C-11 HD: Focal Reducer 

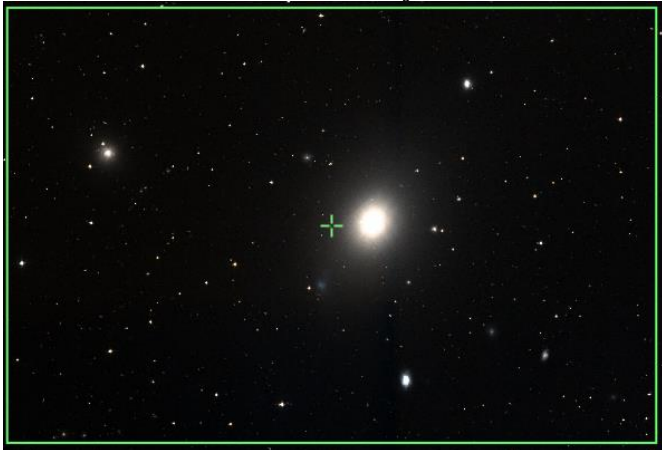
Prospective Imaging Objects – May

M-100(NGC-4303) Config: C11HD ZWO6200MC Type: Face-On Spiral Galaxy Constellation: Coma Berenices Coordinates: 12h 22' 28" 15° 42' 40" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-100/NGC-4321, NGC-4312, 4328, 4322, UGC-7425, IC-783A, Imaging Window: 08:57 – 12:19 Transit: 09:12 72°	C-11 HD: Primary Focus 
Lawn Sprinkler Nebula (NGC-4361) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Corvus Coordinates: 12h 24' 31" -18° 47' 03" Close Star: SAO-157176 (Gienah Corvi) Catalog Objects: NGC-4361 Imaging Window: *08:57 – 11:17 Transit: 09:13 38°	C-11 HD: Primary Focus  Planetary Nebula NGC-6572 Consolidated: 10 frames Coordinates: RA = 10h 07m 01s DEC = 04d 11' 12.0" Size = 27 x 10 arcsec Orientation: 0deg 0' 0" Pixel scale = 0.27 arcsec/pixel F1-200mm James Yoder (Shackelton 2022) M-100, NGC 4303 - Lagoon, Trifid, etc. Config: C-11 HD Primary Focus (HyperStar, 10000000) Exposure: 1000 (10000000) 1000 (10000000)
Markarian Chain(M-84 Et. El.) Config: C11-HD HS ZWO6200MC Type: Galaxy cluster Constellation: Virgo Coordinates: 12h 26' 29" 12° 52' 22" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-84/NGC-4374, NGC-4388, 4425, 4402, M-86/NGC4406, 4438, 4435, and more Imaging Window: 08:57 – 12:13 Transit: 09:14 69°	C-11 HD: HyperStar v4  Markarian's Chain (of galaxies) C-11 HyperStar, 100000, 50min James Yoder 2018.05.15

Prospective Imaging Objects – May

Markarian Chain 2 Config: C11-HD HS ZWO6200MC Type: Galaxy cluster Constellation: Virgo Coordinates: 12h 35' 40" 12° 33' 22" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-84/NGC-4374, NGC-4388, 4425, 4402, M-86/NGC4406, 4438, 4435, and more Imaging Window: 08:57 – 12:13 Transit: 09:14 69°	C-11 HD: HyperStar v4 
Markarian's Chain (M-84) Config: C11-HD FR ZWO6200MC Type: Galaxy cluster Constellation: Virgo Coordinates: 12h 26' 29" 12° 52' 22" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-84/NGC-4374, NGC-4388, 4425, 4402, M-86/NGC4406, 4438, 4435, and more Imaging Window: 08:57 – 12:13 Transit: 09:14 69°	C-11 HD: Focal Reducer 
Emission Line Galaxy (NGC-4449/UGC-7592) Config: C11HD ZWO6200MC Type: Irregular Galaxy Constellation: Canes Venatici Coordinates: 12h 28' 11" 44° 05' 42" Close Star: SAO-28553 (Alioth) Catalog Objects: NGC-4449/UGC-7592 Imaging Window: 08:57 – 01:08 Transit: 09:17 79°	C-11 HD: Primary Focus 

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M-49(NGC-4472) Config: C11HD ZWO6200MC Type: Elliptical Galaxy Constellation: Virgo Coordinates: 12h 29' 58" 07° 59' 51" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-49/NGC-4472 Imaging Window: 08:57 – 12:02 Transit: 09:19 65°	C-11 HD: Primary Focus 
Virgo A(M-87) Config: C11HD ZWO6200MC Type: Elliptical Galaxy Constellation: Virgo Coordinates: 12h 30' 49" 12° 23' 26" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-87/NGC-4486 Imaging Window: 08:57 – 12:17 Transit: 09:20 69°	C-11 HD: Primary Focus 
Cocoon Galaxy(NGC-4490) Config: C11HD ZWO6200MC Type: Interacting Galaxy Pair Constellation: Canes Venatici Coordinates: 12h 30' 36" 41° 38' 34" Close Star: SAO-28179 (Phecda) Catalog Objects: NGC-4490, NGC-4485 Imaging Window: 08:57 – 01:09 Transit: 09:19 82°	C-11 HD: Primary Focus  Cocoon Galaxy (NGC-4490 & NGC-4485) Constellation: Canes Venatici RA = 12h 30m 35.4s, DEC = +41deg 38' 37.8" Size = 36.3 x 24.3 arcmin Orientation: -0.13deg E of N Pixel scale = 0.446 arcsec/pixel FL=2750mm James Webb Decoy: 2020-02-02 - 2020-02-07 Location: Chandler, AZ Config: C-11 HD Blander Skyglow QHY126C Exposure Info: 7x180s/45min Gain: 5200 Offset: 100

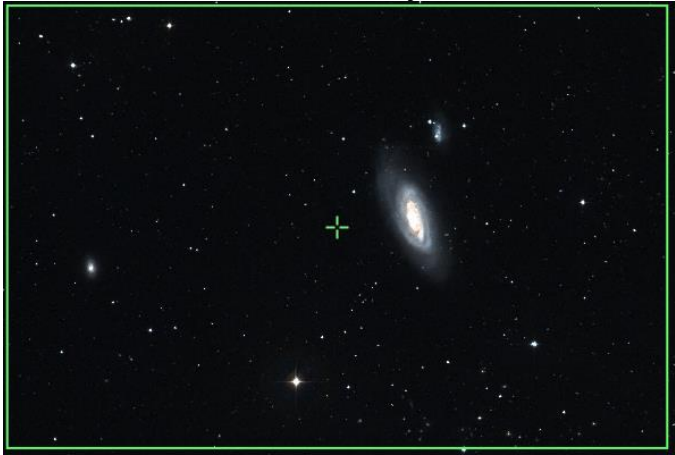
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Lemon Slice Nebula (IC-3568) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Camelopardalis Coordinates: 12h 33' 14" 82° 33' 22" Close Star: SAO-8102 (Kochab) Catalog Objects: IC-3568/UGC-7731 Imaging Window: *08:57 – 02:15 Transit: 09:22 41°	C-11 HD: Primary Focus 
M-91(NGC-4548) Config: C11HD ZWO6200MC Type: Barred Spiral Galaxy Constellation: Coma Berenices Coordinates: 12h 36' 04" 14° 23' 37" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-91/NGC4548, NGC-4571 Imaging Window: 08:57 – 12:28 Transit: 09:24 71°	C-11 HD: Primary Focus 
M-89(NGC-4552) Config: C11HD ZWO6200MC Type: Elliptical Galaxy Constellation: Virgo Coordinates: 12h 35' 43" 12° 24' 24" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-89/NGC4552, NGC-4551, NGC-4550, IC-3574, IC-3586 Imaging Window: 08:57 – 12:22 Transit: 09:25 69°	C-11 HD: Primary Focus 

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NGC-4559 (UGC-7766) Config: C11HD ZWO6200MC Type: Barred Spiral Galaxy Constellation: Coma Berenices Coordinates: 12h 35' 58" 27° 57' 35" Close Star: SAO-44752 (Alkaid) Catalog Objects: NGC-4559/UGC-7766 Imaging Window: 08:57 – 12:57 Transit: 09:25 85°	C-11 HD: Primary Focus 
Siamese Twins(NGC-4567) Config: C11HD ZWO6200MC Type: Elliptical Galaxy Constellation: Virgo Coordinates: 12h 36' 26" 11° 19' 59" Close Star: SAO-100944 (Arcturus) Catalog Objects: NGC-4567, NGC-4568, NGC-4564 Imaging Window: 08:57 – 12:20 Transit: 09:25 68°	C-11 HD: Primary Focus 
Needle Galaxy (NGC-4565) Config: C11HD ZWO6200MC Type: Edge-on Galaxy Constellation: Coma Berenices Coordinates: 12h 36' 02" 25° 56' 51" Close Star: SAO-44752 (Alkaid) Catalog Objects: NGC-4565, NGC-4562 Imaging Window: 08:57 – 12:54 Transit: 09:25 83°	C-11 HD: Primary Focus 

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M-90 (NGC-4569) Config: C11HD ZWO6200MC Type: Spiral Galaxy Constellation: Virgo Coordinates: 12h 37' 11" 13° 09' 19" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-90/NGC-4569 IC-3583, NGC-4584 Imaging Window: 08:57 – 12:25 Transit: 09:26 70°	C-11 HD: Primary Focus 
Galaxy Group 58 Config: C-11HD HyperStar Type: Galaxy Group Constellation: Virgo Coordinates: 12h 37' 35" 12° 18' 56" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-58/NGC-4579 Imaging Window: 08:57 – 12:22 Transit: 09:27 68°	C-11 HD: HyperStar v4 
M-58 (NGC-4579) Config: C11HD ZWO6200MC Type: Barred Spiral Galaxy Constellation: Virgo Coordinates: 12h 37' 44" 11° 49' 06" close Star: SAO-100944 (Arcturus) Catalog Objects: M-58/NGC-4579 Imaging Window: 08:57 – 12:22 Transit: 09:27 68°	C-11 HD: Primary Focus 

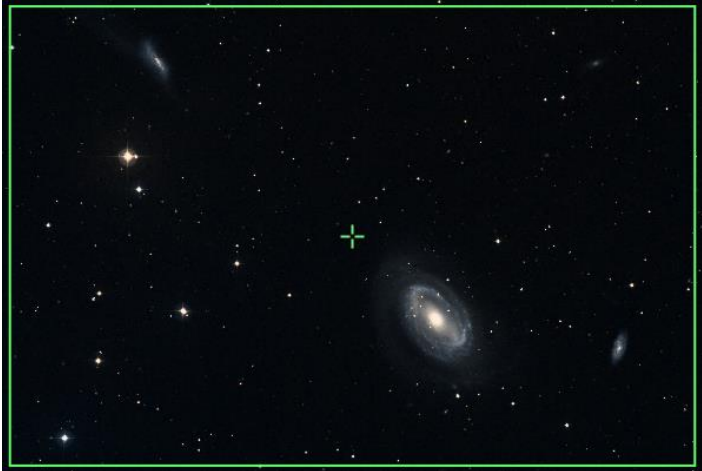
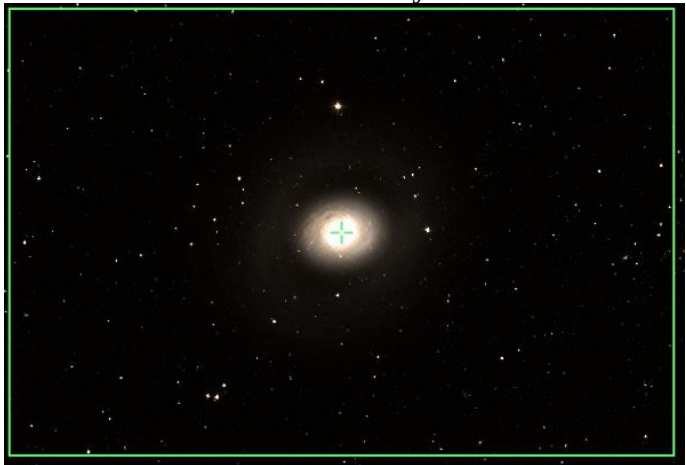
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M-68 (NGC-4590) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Hydra Coordinates: 12h 39' 28" -26° 44' 32" Close Star: SAO-180915 (Kraz) Catalog Objects: M-68/NGC-4590 Imaging Window: *08:57 – 11:17 Transit: 09:28 30°	C-11 HD: Primary Focus 
Sombrero Galaxy (M-104) Config: C11HD ZWO6200MC Type: Edge-on Spiral Galaxy Constellation: Virgo Coordinates: 12h 39' 44" -11° 37' 52" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-104/NGC-4594 Imaging Window: *08:57 – 11:45 Transit: 09:29 45°	C-11 HD: Primary Focus 
Whale and Hockey Stick (NGC-4631, NGC-4656) Config: C11- HD FR ZWO6200MC Type: Galaxies Constellation: Canes Venatici Coordinates: 12h 42' 50" 32° 20' 54" Close Star: SAO-99809 (Denebola) Catalog Objects: NGC-4631, NGC-4656 Imaging Window: 08:57– 01:10 Transit: 09:31 89°	C-11 HD: Focal Reducer 

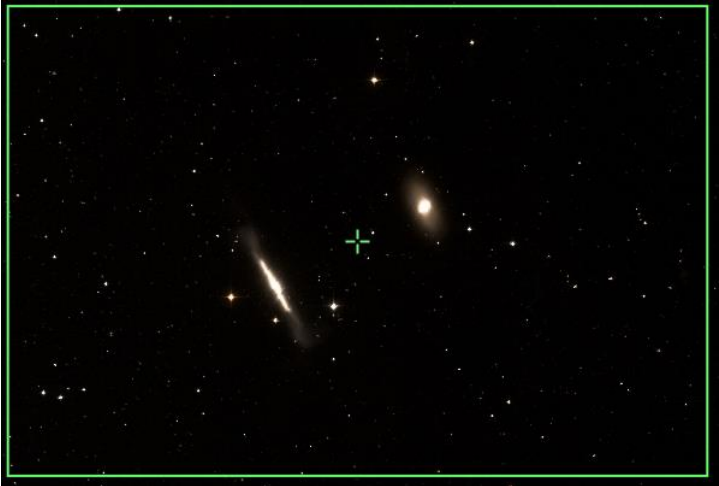
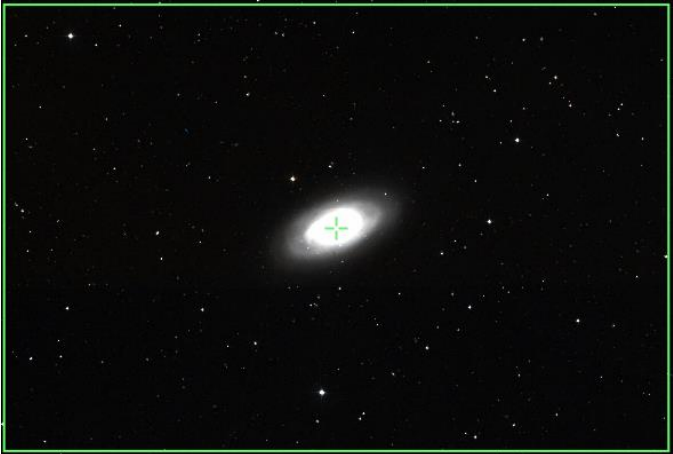
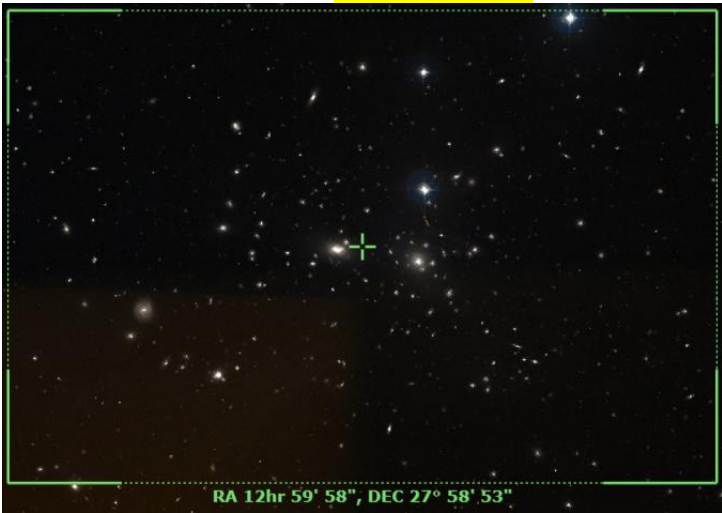
Prospective Imaging Objects – May

M-59, M-60 group Config: C11- HD FR ZWO6200MC Type: Galaxy Group Constellation: Virgo Coordinates: 12h 42' 42" 11° 40' 33" Close Star: SAO-99809 (Denebola) Catalog Objects: M-59/NGC-4621, M-60/NGC-4649, NGC-4656, 4647, 4638, 4607, 4606 Imaging Window: 08:57 – 12:26 Transit: 09:31 68°	C-11 HD: Focal Reducer  Virgo Cluster of Galaxies Constellation: Virgo the virgin Exposure Info: [L=84fms@6min, G=11fms@6min, R=12fms@6min, B=14fms@6min] Total = 12hrs 18min Gain: 100 / Offset: 50 Config: C11-HD (0.7 Reducer) Filter: Baader Skyglow RGB Camera: ZWO ASI4200 James Yoder (Dates) 2021.04.30 - 2020.05.16 / Location: Chandler, AZ [RA = 12h 42m 40.5s DEC = +11deg 40' 19.7"] Size = 57.3 x 37.7 arcmin Orientation: -9.2deg E of N Pixel scale = 0.785 arcsec/pixel FL=1900mm
TheMice (NGC-4676 A & B) Config: C11HD ZWO6200MC Type: Interacting Galaxies Constellation: Coma Berenices Coordinates: 12h 46' 07" 30° 43' 43" Close Star: SAO-99809 (Denebola) Catalog Objects: NGC-4676A & B Imaging Window: 08:57 – 01:12 Transit: 09:35 87°	C-11 HD: Primary Focus 
NGC-4725 (PGC-43451) Config: C11- HD FR ZWO6200MC Type: Galaxy group Constellation: Coma Berenices Coordinates: 12h 50' 55" 25° 35' 59" Close Star: SAO-99809 (Denebola) Catalog Objects: NGC-4725, NGC-4712, NGC-4747 Imaging Window: 08:57 – 01:07 Transit: 09:39 82°	C-11 HD: Focal Reducer  Galaxy Cluster NGC-4747, NGC-4725, NGC-4712 Constellation: Coma Berenices Exposure Info: [60fms@3min] Gain: 3200 / Offset: 180 Config: C11-HD (0.7 Reducer) Filter: Baader Skyglow Camera: QHY128C James Yoder (Dates) 2021.01.02, 2021.01.03 / Location: Chandler, AZ [RA = 12h 50m 40.0s DEC = +25deg 36' 33.3"] Size = 44.39 x 29.62 arcmin Orientation: 0deg E of N Pixel scale = 0.630 arcsec/pixel FL=1933mm

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NGC-4725 (PGC-43451) Config: C11HD ZWO6200MC Type: Galaxy group Constellation: Coma Berenices Coordinates: 12h 50' 50" 25° 35' 23" Close Star: SAO-99809 (Denebola) Catalog Objects: NGC-4725, NGC-4712, NGC-4747 Imaging Window: 08:57 – 01:07 Transit: 09:39 82°	C-11 HD: Primary Focus 
M-94 (NGC-4736) Config: C11HD ZWO6200MC Type: Galaxy Constellation: Canes Venatici Coordinates: 12h 50' 53" 41° 07' 17" Close Star: SAO-28553 (Alioth) Catalog Objects: M-94/NGC-4736 Imaging Window: 08:57 – 01:29 Transit: 09:40 82°	C-11 HD: Primary Focus 
NGC-4731 (PGC-43507) Config: C11HD ZWO6200MC Type: Barred Spiral Galaxy Constellation: Virgo Coordinates: 12h 51' 01" -06° 21' 49" Close Star: SAO-157923 (Spica) Catalog Objects: NGC-4731 Imaging Window: *08:57 – 12:22 Transit: 09:40 50°	C-11 HD: Primary Focus 

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NGC-4762, 4754 (PGC-43733) Config: C11HD ZWO6200MC Type: Edge on Galaxy Constellation: Virgo Coordinates: 12h 52' 35" 11° 16' 42" Close Star: SAO-99809 (Denebola) Catalog Objects: NGC-4762, NGC-4754 Imaging Window: 08:57 – 12:36 Transit: 09:42 68°	C-11 HD: Primary Focus 
Black Eye Galaxy (M-64) Config: C11HD ZWO6200MC Type: Galaxy Constellation: Coma Berenices Coordinates: 12h 56' 44" 21° 40' 59" Close Star: SAO-99809 (Denebola) Catalog Objects: M-64/NGC-4826 Imaging Window: 08:57 – 01:06 Transit: 09:46 78°	C-11 HD: Primary Focus 
Coma Galaxy Cluster (Abell-1656) Config: C11- HD FR ZWO6200MC Type: Galaxy Cluster Constellation: Coma Berenices Coordinates: 12h 59' 58" 27° 58' 53" Close Star: SAO-99809 (Denebola) Catalog Objects: Abell-1656 Imaging Window: 08:57 – 01:21 Transit: 09:49 84°	C-11 HD: Focal Reducer 

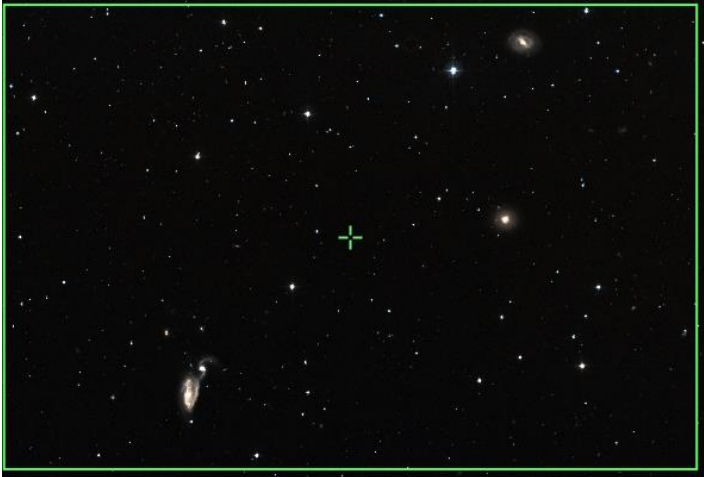
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Coma Galaxy Cluster (Abell-1656) Config: C11HD ZWO6200MC Type: Galaxy Cluster Constellation: Coma Berenices Coordinates: 13h 00' 06" 28° 00' 31" Close Star: SAO-99809 (Denebola) Catalog Objects: Abell-1656 Imaging Window: 08:57 – 01:21 Transit: 09:49 84°	C-11 HD: Primary Focus  Galaxy Cluster Abell-1656 Constellation: Coma Berenices RA = 19h 00m 06s DEC = +28° 00' 31" Size = 47 x 37 arcmin / Pixel scale = 0.846 arcsec/pixel James Webb DSOs 2023/04/22 Location: Los Peñasquitos, San Diego, CA Config: C-11 HD 360 Filter (QHY12K) Exposure info: 2000x30min, Gain: 1200, Offset: 100
M-53 (NGC-5024) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Coma Berenices Coordinates: 13h 12' 55" 18° 10' 11" Close Star: SAO-99809 (Denebola) Catalog Objects: M-53/NGC-5024 Imaging Window: 08:57 – 01:14 Transit: 10:02 75°	C-11 HD: Primary Focus  Globular Cluster Messier 53 Constellation: Coma Berenices RA = 13h 12m 52s DEC = +18° 10' 11" Size = 27.7 x 27.0 arcmin / Orientation: 0.0deg E of N / Pixel scale = 0.632 arcsec/pixel / F1=2722mm James Webb DSOs 2023/04/21 - 2023/04/27 Location: Chandra, AZ Config: C-11 HD 3600 MegaPrime Filter (QHY12K) Exposure info: 3000x30min, Gain: 1200, Offset: 100
NGC-5033 (PGC-45948) Config: C11HD ZWO6200MC Type: Spiral Galaxy Constellation: Canes Venatici Coordinates: 13h 13' 28" 36° 35' 36" Close Star: SAO-28553 (Alioth) Catalog Objects: NGC-5033/PGC-45948 Imaging Window: 08:51 – 01:47 Transit: 10:02 87°	C-11 HD: Primary Focus 

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Sunflower Galaxy (M-63) Config: C11HD ZWO6200MC Type: Spiral Galaxy Constellation: Canes Venatici Coordinates: 13h 15' 15" 42° 04' 41" Close Star: SAO-28553 (Alioth) Catalog Objects: M-63/NGC-5055, UGC-8313 Imaging Window: 08:57 – 01:54 Transit: 10:05 81°	C-11 HD: Primary Focus  M-63 Sunflower Galaxy James Yoder 2018.04.15
NGC-5053 Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Coma Berenices Coordinates: 13h 16' 27" 17° 41' 55" Close Star: SAO-99809 (Denebola) Catalog Objects: NGC-5053 Imaging Window: 08:57 – 01:17 Transit: 10:05 74°	C-11 HD: Primary Focus  Globular Cluster NGC-5053 Constellation: Coma Berenices RA = 13h 16m 27.2s DEC = +17deg 41' 55.7" Size = 37.7 x 27.8 arcmin Orientation: 0 deg E of N Pixel scale = 0.452 arcseconds (FL=2750mm) James Yoder Dates: 2022/04/21 - 2022/04/21 Location: Chandler, AZ Config: C-11 HD Shader Optics Filter: QHY12-M Exposure Info: 100frames@2min / Gain: 3200 / OIBits: 180
Whirlpool Galaxy (M-51) Config: C11HD ZWO6200MC Type: Interacting Galaxies Constellation: Canes Venatici Coordinates: 13h 29' 53" 47° 11' 44" Close Star: SAO-28553 (Alioth) Catalog Objects: M-51/NGC-5194, NGC-5195 Imaging Window: 08:51 – 02:11 Transit: 10:19 76°	C-11 HD: Primary Focus  Whirlpool Galaxy M-51 (NGC-5194) Constellation: Canes Venatici RA = 13h 29m 53.1s DEC = +47deg 11' 44.1" Size = 10.1 x 10.1 arcmin Orientation: 0 deg E of N Pixel scale = 0.452 arcseconds (FL=2750mm) James Yoder Dates: 2022/04/21 - 2022/04/21 Location: Chandler, AZ Config: C-11 HD Shader Optics Filter: QHY12-M Exposure Info: 100frames@2min / Gain: 3200 / OIBits: 180

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M-3 (NGC-5272) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Canes Venatici Coordinates: 13h 42' 11" 28° 22' 34" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-3/NGC-5272 Imaging Window: 08:57 – 02:04 Transit: 10:31 85°	C-11 HD: Primary Focus  Globular Cluster M-3 Copyright © 2025, ZWO Optics Inc. All rights reserved. This image is for personal use only. No part of this image may be reproduced without written permission from ZWO Optics Inc.
Heron Galaxy (NGC-5395) et el. Config: C11HD ZWO6200MC Type: Galaxies Constellation: Canes Venatici Coordinates: 13h 57' 46" 37° 35' 31" Close Star: SAO-100944 (Arcturus) Catalog Objects: NGC-5395, NGC-5394, NGC-5380, NGC-5378 Imaging Window: 08:57 – 02:33 Transit: 10:47 86°	C-11 HD: Primary Focus 
Pinwheel Galaxy (M-101) Config: C11HD ZWO6200MC Type: Face-on Spiral Galaxy Constellation: Ursa Major Coordinates: 14h 03' 54" 54° 22' 44" Close Star: SAO-28553 (Alioth) Catalog Objects: M-101/NGC-5457, NGC-5477 Imaging Window: 08:57 – 02:45 Transit: 10:52 69°	C-11 HD: Primary Focus  M-101 (Pinwheel Galaxy) with Supernova Copyright © 2025, ZWO Optics Inc. All rights reserved. This image is for personal use only. No part of this image may be reproduced without written permission from ZWO Optics Inc.

Prospective Imaging Objects – May

NGC-5466 Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Bootes Coordinates: 14h 05' 27" 28° 32' 06" Close Star: SAO-100944 (Arcturus) Catalog Objects: NGC-5466 Imaging Window: 08:57 – 02:27 Transit: 10:54 85°	C-11 HD: Primary Focus  Globular Cluster NGC-5466 Constellation: Bootes RA = 14h 05m 27.0s DEC = 28° 32' 06" S (J2000) Size = 10.0 arcmin (10.0 arcmin) Pixel scale = 0.440 arcsec/pixel (1.1" x 0.9" CCD)
Spindle Galaxy (M-102) Config: C11HD ZWO6200MC Type: Galaxy Constellation: Draco Coordinates: 15h 06' 29" 55° 45' 49" Close Star: SAO-28553 (Alioth) Catalog Objects: M-102 Imaging Window: 08:57 – 03:47 Transit: 11:55 69°	C-11 HD: Primary Focus  Spindle Galaxy (M-102/NGC-5866) Constellation: Draco RA = 15h 06m 29.0s DEC = 55° 45' 49" N (J2000) Size = 10.0 arcmin (10.0 arcmin) Pixel scale = 0.440 arcsec/pixel (1.1" x 0.9" CCD)
NGC-5905, 5908 Config: C11HD ZWO6200MC Type: Galaxies Constellation: Drao Coordinates: 15h 16' 07" 55° 28' 10" Close Star: SAO-28737 (Mizar) Catalog Objects: NGC-5905, 5908 Imaging Window: 08:57 – 03:51 Transit: 12:04 68°	C-11 HD: Primary Focus  Galaxies NGC-5905, NGC-5908 Constellation: Draco RA = 15h 16m 07.0s DEC = 55° 28' 10" N (J2000) Size = 10.0 arcmin (10.0 arcmin) Pixel scale = 0.440 arcsec/pixel (1.1" x 0.9" CCD)

Prospective Imaging Objects – May

Splinter Galaxy (NGC-5907) Config: C11HD ZWO6200MC Type: Galaxy Constellation: Drao Coordinates: 15h 15' 54" 56° 19' 49" Close Star: SAO-100944 (Arcturus) Catalog Objects: NGC-5907 Imaging Window: 08:57 – 03:51 Transit: 12:04 67°	C-11 HD: Primary Focus  Splinter Galaxy (NGC 5907) Constellation: Draco James Yoder 2017.01.25 C-11 HD, 1600iso, 70min Exposure Info: Offsetting/Star: Gain: 3200 (Offset: 100)
M-5 (NGC-5904) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Serpens Coordinates: 15h 18' 34" 02° 05' 00" Close Star: SAO-100944 (Arcturus) Catalog Objects: M-5/NGC-5904 Imaging Window: 09:52 – 02:28 Transit: 12:07 59°	C-11 HD: Primary Focus  M-005 Globular Cluster in Serpens James Yoder 2017.01.25
Draco Trio (NGC-5985,5982,5981) Config: C11HD ZWO6200MC Type: Galaxies Constellation: Drao Coordinates: 15h 38' 20" 59° 22' 56" Close Star: SAO-28737 (Mizar) Catalog Objects: NGC-5985, NGC-5982, NGC-5981 Imaging Window: 08:57 – 03:51 Transit: 12:28 64°	C-11 HD: Primary Focus  NGC-5981, NGC-5982, NGC-5985 Galaxy Cluster in Draco C-11, 1600iso, 70min James Yoder 2018.05.08

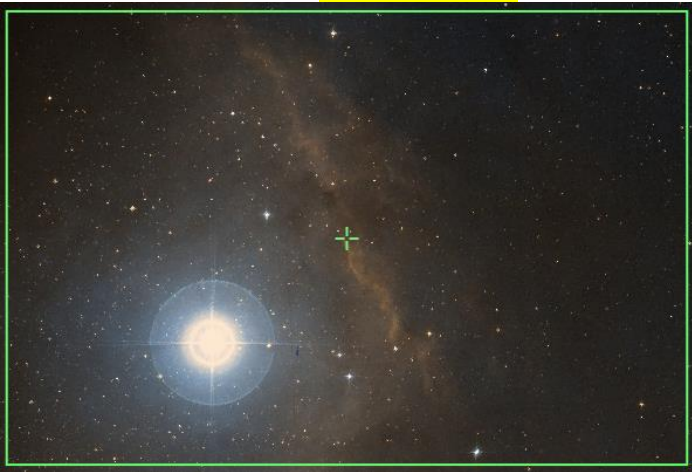
Prospective Imaging Objects – May

Sharpless 2-1 (SH2-1) Config: C11-HD HS ZWO6200MC Type: Diffuse Nebula Constellation: Scorpius Coordinates: 15h 56' 09" -25° 40' 29" Close Star: SAO-208078 (Wei) Catalog Objects: SH2-1/LBN-1093 Imaging Window: *10:57 – 02:44 Transit: 12:47 31°	C-11 HD: HyperStar v4 
Seyfert's Sextet (NGC-6027A-E) Config: C11HD ZWO6200MC Type: Galaxy Group & One Constellation: Serpens Coordinates: 15h 59' 46" 20° 47' 27" Close Star: SAO-83893 Catalog Objects: NGC-6027A-E, UGC-10127 Imaging Window: 09:35 – 03:51 Transit: 12:48 77°	C-11 HD: Primary Focus  NGC-6027 (Seyfert's Sextet) Constellation: Serpens RA: 15h 59m 46s Dec: 20° 47' 27" (J2000.0) Distance: 110 Mpc (360 million light years) Sharpless 2-1 (SH2-1) Constellation: Scorpius RA: 15h 56m 09s Dec: -25° 40' 29" (J2000.0) Distance: 110 Mpc (360 million light years)
Hercules Galaxy Cluster (Abell-2151) Config: C11HD ZWO6200MC Type: Galaxy Cluster Constellation: Hercules Coordinates: 16h 05' 13" 17° 45' 39" Close Star: SAO-100944 (Arcturus) Catalog Objects: Abell-2151 Imaging Window: 09:48 – 03:51 Transit: 12:54 74°	C-11 HD: Primary Focus  Hercules Cluster of galaxies (Abell 2151) Constellation: Hercules RA: 16h 05m 13s Dec: 17° 45' 39" (J2000.0) Distance: 110 Mpc (360 million light years) Sharpless 2-1 (SH2-1) Constellation: Scorpius RA: 15h 56m 09s Dec: -25° 40' 29" (J2000.0) Distance: 110 Mpc (360 million light years)

Prospective Imaging Objects – May

NGC-6058 Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Hercules Coordinates: 16h 04' 27" 40° 41' 01" Close Star: SAO-100944 (Arcturus) Catalog Objects: NGC-6058 Imaging Window: 09:10 – 03:51 Transit: 12:53 83°	C-11 HD: Primary Focus  FOV 0.73 x 0.49° · RA 16h 04' 27", DEC 40° 41' 01"
Tadpole Galaxy (Arp-188) Config: C11HD ZWO6200MC Type: Galaxy Constellation: Draco Coordinates: 16h 06' 04" 55° 26' 07" Close Star: SAO-28737 (Mizar) Catalog Objects: Arp-188, PGC-57087, 57114, 57108 Imaging Window: 09:08 – 03:51 Transit: 12:54 68°	C-11 HD: Primary Focus  Tadpole Galaxy (ARP-188) Constellation: Draco the dragon [RA = 16h 06m 04.3s, DEC = +55deg 26' 07.7"] Size = 41.8 x 27.9 arcsec (Orientation: 355deg E of N) Pixel scale = 0.446 arcsec/pixel James Webb (Date: 2025-05-17, Location: Maunakea Ground Based, AZ) Config: C-11 HD Primary Focus, No Filter (QHY226, F1-100A) Exposure Info: [Shutter/Gain/Rate: 1200 / 0.05s / 1.00]
White Eyed Pea (IC-4593) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Hercules Coordinates: 15h 11' 45" 12° 03' 45" Close Star: SAO-100944 (Arcturus) Catalog Objects: IC-4593 Imaging Window: 10:10 – 03:57 Transit: 01:00 69°	C-11 HD: Primary Focus  White Eyed Pea Nebula (IC-4593) Constellation: Hercules [RA = 15h 11m 45.0s, DEC = +12deg 03' 45.0"] Size = 41.8 x 27.9 arcsec (Orientation: 355deg E of N) Pixel scale = 0.446 arcsec/pixel James Webb (Date: 2025-05-17, Location: Maunakea Ground Based, AZ) Config: C-11 HD Primary Focus, No Filter (QHY226, F1-100A) Exposure Info: [Shutter/Gain/Rate: 1200 / 0.05s / 1.00]

Prospective Imaging Objects – May

Blue Horshead (IC-4592) Config: C11-HD HS ZWO6200MC Type: Bright Nebula Constellation: Scorpius Coordinates: 16h 14' 15" -19° 17' 16" Close Star: SAO-184415 (Antares) Catalog Objects: IC-4592 Imaging Window: *10:24 – 03:44 Transit: 01:01 37°	C-11 HD: HyperStar v4  Blue Horse Nebula (IC-4592) Constellation: Scorpius RA = 16h 14m 12.7s DEC = -19deg 17' 13.9" Size = 3.45deg x 2.5deg Orientation: 170deg E of N Pixel scale = 2.37 arcsec/pixel FL = 620mm James Yoder Date: 2025-04-21 Location: Newmarket, Canada, British Columbia Config: C-11 HD HyperStar V4 Baader Nipkow Filter (QHY128k) Exposure Info: 250img/Frame Gain: 1200 Offset: 180
M-80 (NGC-6093) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Scorpius Coordinates: 16h 17' 02" -22° 58' 28" Close Star: SAO-184415 (Antares) Catalog Objects: M-80/NGC-6093 Imaging Window: *10:49 – 03:20 Transit: 01:05 34°	C-11 HD: Primary Focus  Globular Cluster M-80 Constellation: Scorpius RA = 16h 17m 02.4s DEC = -22deg 58' 32.1" Size = 37.7 x 27.0 arcmin Orientation: 0 deg E of N Pixel scale = 0.997 arcsec/pixel FL = 1270mm James Yoder Date: 2025-04-21 Location: Canada, AZ Config: C-11 HD Primary Focus QHY128k Exposure Info: 97img/Frame Gain: 1200 Offset: 180
SH2-9 Config: C11-HD FR ZWO6200MC Type: Diffuse Nebula Constellation: Scorpius Coordinates: 16h 20' 16" -25° 25' 53" Close Star: SAO-184415 (Antares) Catalog Objects: SH2-9 Imaging Window: *11:13 – 03:08 Transit: 01:09 31°	C-11 HD: Focal Reducer 

Prospective Imaging Objects – May

M-4 (NGC-6121) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Scorpius Coordinates: 16h 23' 35" -26° 31' 29" Close Star: SAO-184415 (Antares) Catalog Objects: M-4/NGC-6121 Imaging Window: *11:25 – 12:56 Transit: 02:56 30°	C-11 HD: Primary Focus  Globular Cluster Messier 4 Constellation: Scorpius RA = 16h 23m 35.2s, DEC = -26deg 31' 01.4" (Size = 37.8 x 27.9 arcmin) (Orientation: 0 deg E of N) (Pixel scale = 0.492 arcsec/pixel) (FC=1/22.5mm)
Ophiuchus Complex (IC-4604) Config: C11-HD HS ZWO6200MC Composite with M-4 Type: Bright Nebula Constellation: Scorpius Coordinates: Frame 01 RA: 16hr 26' 46" DEC: -24° 08' 13" Frame 02 RA: 16hr 26' 46" DEC: -26° 14' 42" Close Star: SAO-184415 (Antares) Catalog Objects: IC-4604 Imaging Window: *11:01– 03:28 Transit: 01:14 33°	C-11 HD: HyperStar v4 Composite!  Ophiuchus Complex Region Constellation: Ophiuchus and Scorpius RA = 16h 26m 46.0s, DEC = -24deg 08' 13.0" (Size = 4.0deg x 3.7deg, Pixel scale = 0.57 arcsec/pixel) (Orientation: 0 deg E of N)

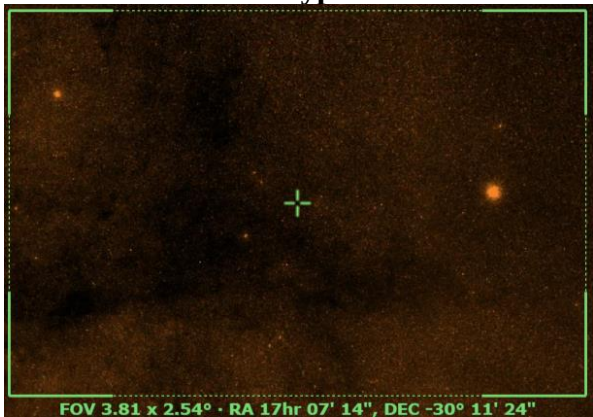
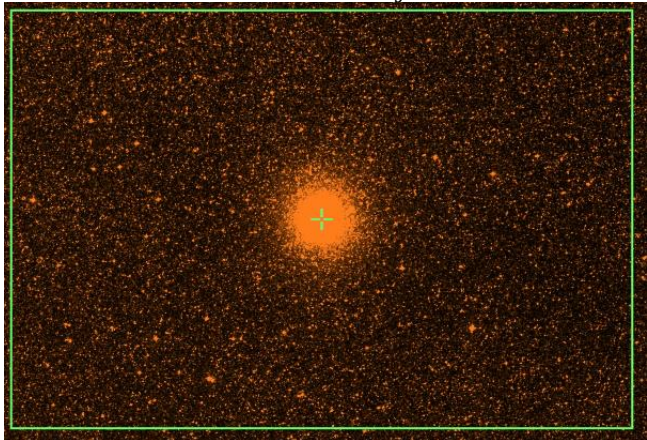
Prospective Imaging Objects – May

Perfect Planetary Nebula (Abell-39) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Hercules Coordinates: 16h 27' 34" 27° 54' 29" Close Star: SAO-84951 (Sarin) Catalog Objects: Abell-39/PK 47+42.1 Imaging Window: 09:50 – 03:51 Transit: 01:16 84°	C-11 HD: Primary Focus  Planetary Nebula Abell-39 Constellation: Hercules RA = 16h 27m 32.8s DEC = +27deg 54' 19.0" Size = 39 x 26 arcmin Orientation: 86deg E of N Pixel scale = 0.446 arcsec/pixel FL=2000mm Exposure Info: (0000)None (Gain: 3200 Offset: 100)
Crucifix Cluster (M-107) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Ophiuchus Coordinates: 16h 32' 32" -13° 03' 11" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: M-107/NGC-6171 Imaging Window: *10:45 – 03:51 Transit: 01:21 44°	C-11 HD: Primary Focus 
Hercules Cluster (M-13) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Hercules Coordinates: 16h 41' 41" 36° 27' 39" Close Star: SAO-067174 (Vega) Catalog Objects: M-13/NGC-6205 Imaging Window: 09:52 – 03:51 Transit: 01:30 87°	C-11 HD: Primary Focus  Great Hercules Cluster M-13 (NGC-6205) Constellation: Hercules RA = 16h 41m 40.9s DEC = +36deg 27' 39.0" Size = 40 x 30 arcmin Pixel scale = 0.446 arcsec/pixel Exposure Info: (0000)None (Gain: 3200 Offset: 100)

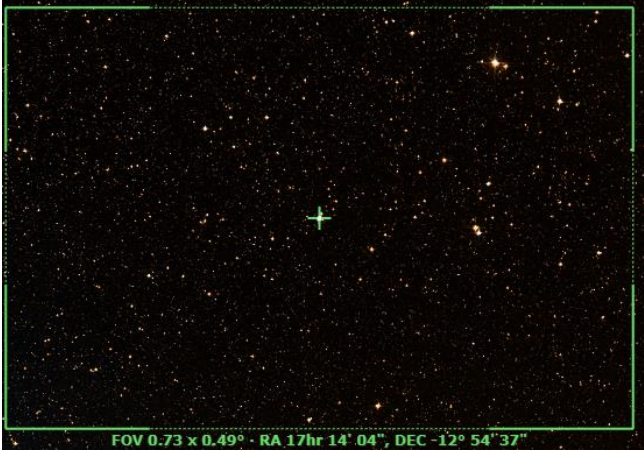
Prospective Imaging Objects – May

Turtle Nebula (NGC-6210) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Hercules Coordinates: 16h 44' 29" 23° 48' 02" Close Star: SAO-84411 (Kornephoros) Catalog Objects: NGC-6210 Imaging Window: 10:14 – 04:58 Transit: 01:33 80°	C-11 HD: Primary Focus  Planetary Nebula NGC-6210 Constellation: Hercules Coordinates: RA: 16h 44m 29.0s, DEC: 23° 48' 02.0" Size: 27.5 x 19 arcmin Orientation: 96deg 5.4°N Pixel scale: 0.27 arcsec/pixel FL: 2000mm
M-12(NGC-6218) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Ophiuchus Coordinates: 16h 47' 15" -01° 56' 50" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: M-12/NGC-6218 Imaging Window: 11:41 – 03:37 Transit: 01:35 55°	C-11 HD: Primary Focus  Globular Cluster Messier 12 Constellation: Ophiuchus Coordinates: RA: 16h 47m 15.0s, DEC: -01° 56' 50.0" Size: 37.7 x 27.0 arcmin Orientation: 0 deg E of N Pixel scale = 0.432 arcsec/pixel FL: 2000mm
M-10(NGC-6254) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Ophiuchus Coordinates: 16h 57' 09" -04° 05' 56" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: M-10/NGC-6254 Imaging Window: 12:03 – 03:34 Transit: 01:45 53°	C-11 HD: Primary Focus  Globular Cluster M-10 (NGC-6254) Constellation: Ophiuchus Coordinates: RA: 16h 57m 09.0s, DEC: -04° 05' 56.0" Size: 37.7 x 27.0 arcmin Orientation: 0 deg E of N Pixel scale = 0.432 arcsec/pixel FL: 2000mm

Prospective Imaging Objects – May

M-62 Region (NGC-6266) Config: C11-HD HS ZWO6200MC Type: Globular Cluster Constellation: Ophiuchus Coordinates: 16h 25' 36" -23° 27' 00" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: M-62/NGC-6266 Imaging Window: *12:46 – 02:44 Transit: 01:49 33°	C-11 HD: HyperStar v4 
M-62(NGC-6266) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Ophiuchus Coordinates: 17h 01' 13" -30° 06' 42" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: M-62/NGC-6266 Imaging Window: *12:46 – 02:44 Transit: 01:49 33°	C-11 HD: Primary Focus 
M-19(NGC-6273) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Ophiuchus Coordinates: 17h 02' 38" -26° 16' 03" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: M-19/NGC-6273 Imaging Window: *12:02 – 03:51 Transit: 01:51 30°	C-11 HD: Primary Focus 

Prospective Imaging Objects – May

Box Nebula (NGC-6309) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Ophiuchus Coordinates: 17h 14' 04" -12° 54' 37" Close Star: SAO-160332 (Sabik) Catalog Objects: NGC-6309 Imaging Window: *10:53 – 03:51 Transit: 02:02 44°	C-11 HD: Primary Focus 
M-92(NGC-6341) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Hercules Coordinates: 17h 17' 07" 43° 08' 13" Close Star: SAO-067174 (Vega) Catalog Objects: M-92/NGC-6341 Imaging Window: 10:21 – 03:51 Transit: 02:05 80°	C-11 HD: Primary Focus 
M-9(NGC-6333) Config: C11- HD FR ZWO6200MC Type: Glob Cluster & DNeB Constellation: Ophiuchus Coordinates: 17h 18' 24" -18° 34' 58" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: M-9/NGC-6333 Imaging Window: *11:25 – 03:51 Transit: 02:07 38°	C-11 HD: Focal Reducer 

Prospective Imaging Objects – May

M-9(NGC-6333) Config: C11HD ZWO6200MC Type: Glob Cluster & DNeB Constellation: Ophiuchus Coordinates: 17h 19' 12" -18° 30' 57" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: M-9/NGC-6333 Imaging Window: *11:25 – 03:51 Transit: 02:07 38°	C-11 HD: Primary Focus  Globular Cluster Messier 9 Constellation: Ophiuchus RA = 17h 19m 11.7s, DEC = -18deg 30' 57.0" (J2000) (Observation: 9 Aug 11 of N) (Pixel scale = 0.612 arcsecond) (F5 - 272nm) James Yoder Date(s) 2023/08/21 2023/08/21 Location: Chandler, AZ Config: C-11 HD Bisque HyperStar Filter DSO1126 Exposure Info: 10frames/2min Gain: 3200 Offset: 100
Pipe Nebula (LDN 1773) Config: C11- HD FR ZWO6200MC Type: Dark Nebula Constellation: Ophiuchus Coordinates: 17h 20' 10" -26° 50' 18" Close Star: SAO-184415 (Antares) Catalog Objects: LDN-1773 Imaging Window: *12:23 – 03:51 Transit: 02:09 30°	C-11 HD: Focal Reducer  FOV 1.1 x 0.7° RA 17hr 20' 10" DEC -26° 50' 18"
Pipe Nebula (LDN 1773) Config: C11-HD HS ZWO6200MC Type: Dark Nebula Constellation: Ophiuchus Coordinates: 17h 19' 54" -26° 52' 60" Close Star: SAO-184415 (Antares) Catalog Objects: LDN-1773 Imaging Window: *12:23 – 03:51 Transit: 02:09 30°	C-11 HD: HyperStar v4  Pipe Nebula in Ophiuchus C-11 HyperStar, 6400nm, 43min James Yoder 2018.05.15

Prospective Imaging Objects – May

Dark Horse Nebula (LDN 42)

Config: C11-HD | HS |
ZWO6200MC

Type: Dark Nebula

Constellation: Ophiuchus

Frame 01

RA: 17hr 32' 42" DEC: -24° 55' 48"

Frame 02

RA: 17hr 19' 18" DEC: -24° 55' 48"

Frame 03

RA: 17hr 32' 49" DEC: -26° 57' 43"

Frame 04

RA: 17hr 19' 11" DEC: -26° 57' 43"

Close Star: SAO-184415 (Antares)

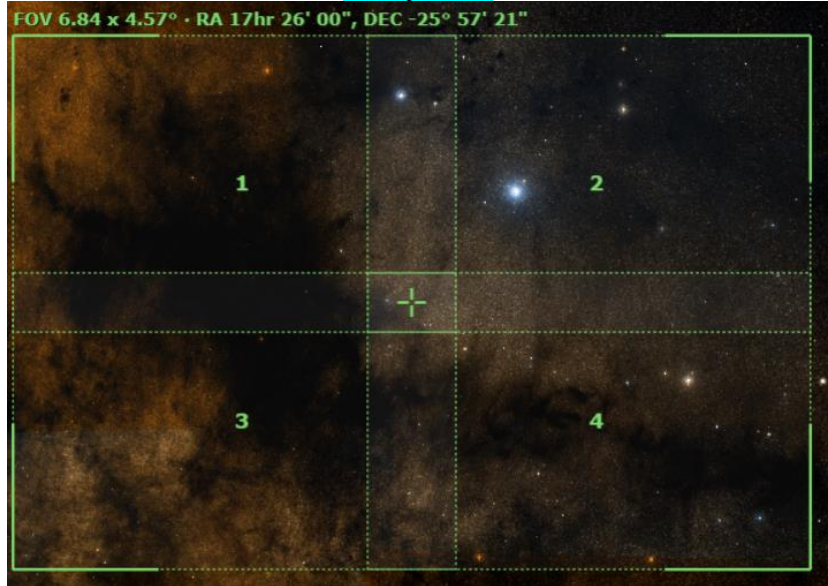
Catalog Objects: [LDN-42](#)

Imaging Window: *12:26 – 03:51

Transit: 02:21 | 31°

C-11 HD: HyperStar v4

Composite!



Dark Horse Nebula (LDN 42)

Config: C11-HD | HS |
ZWO6200MC

Type: Dark Nebula

Constellation: Ophiuchus

Frame 01

RA: 17hr 33' 57" DEC: -24° 38' 08"

Frame 02

RA: 17hr 33' 57" DEC: -26° 40' 04"

Coordinates:

17h 33' 57"

-24° 38' 08"

Close Star: SAO-184415 (Antares)

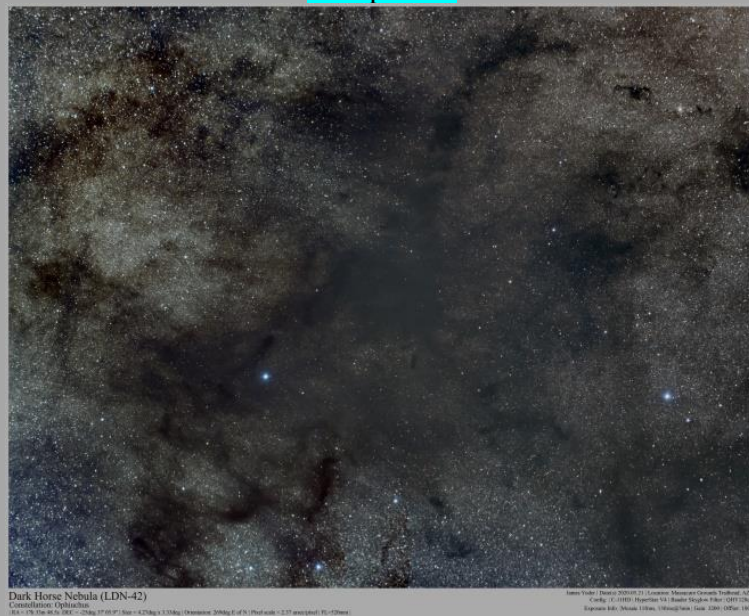
Catalog Objects: [LDN-42](#)

Imaging Window: *12:26 – 03:51

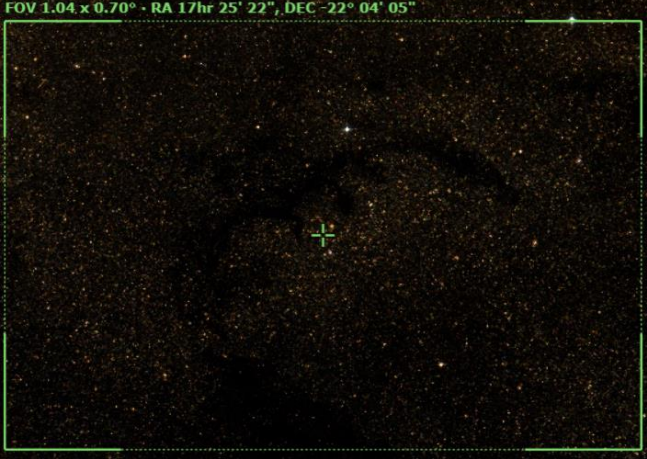
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C-11 HD: HyperStar v4

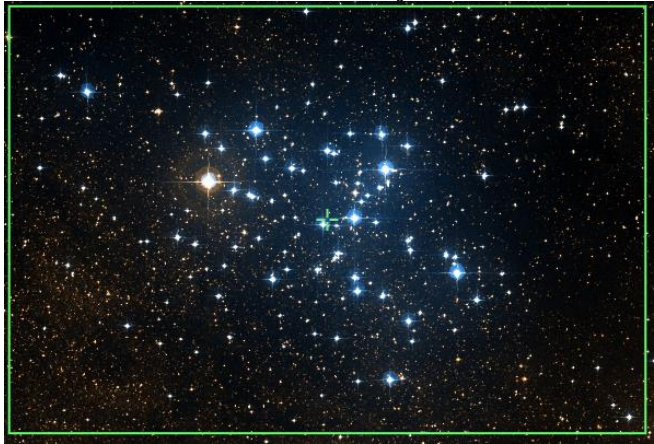
Composite!



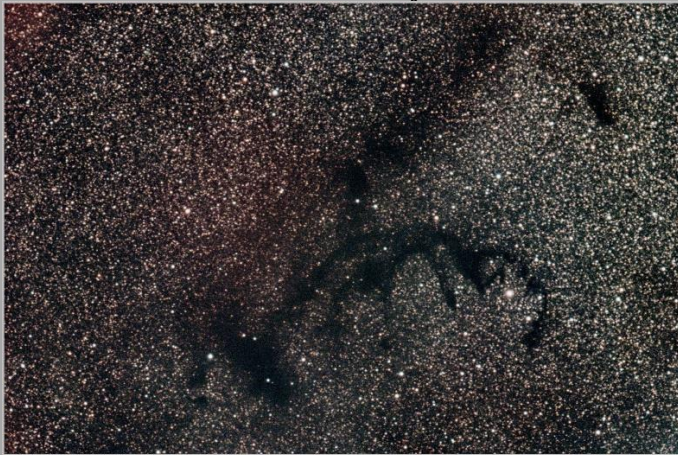
Prospective Imaging Objects – May

The Snake Nebula (B-72) Config: C11-HD HS ZWO6200MC Type: Dark Nebula Constellation: Ophiuchus Coordinates: 17h 25' 49" -23° 58' 05" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: B-72/LDN-66 Imaging Window: *12:02 – 03:51 Transit: 02:12 33°	C-11 HD: HyperStar v4 
The Snake Nebula (B-72) Config: C11- HD FR ZWO6200MC Type: Dark Nebula Constellation: Ophiuchus Coordinates: 17h 24' 19" -23° 39' 06" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: B-72/LDN-66 Imaging Window: *12:02 – 03:51 Transit: 02:12 33°	C-11 HD: Focal Reducer  The Snake Nebula Constellation: Ophiuchus RA = 17h 25m 49s, DEC = -23° 58' 05" (J2000) (Pixel scale = 0.179 arcsec/pixel) Exposure: 10 x 100s (Total: 1000s) (Gain: 100) (Offset: 100)
Bat'leth (B-75) Config: C11- HD FR ZWO6200MC Type: Dark Nebula Constellation: Ophiuchus Coordinates: 17h 25' 22" -22° 04' 05" Close Star: SAO-184415 (Antares) Catalog Objects: B-75/LDN-112 Imaging Window: *11:49 – 03:51 Transit: 02:13 35°	C-11 HD: Focal Reducer FOV 1.04° x 0.70° - RA 17hr 25' 22", DEC -22° 04' 05" 

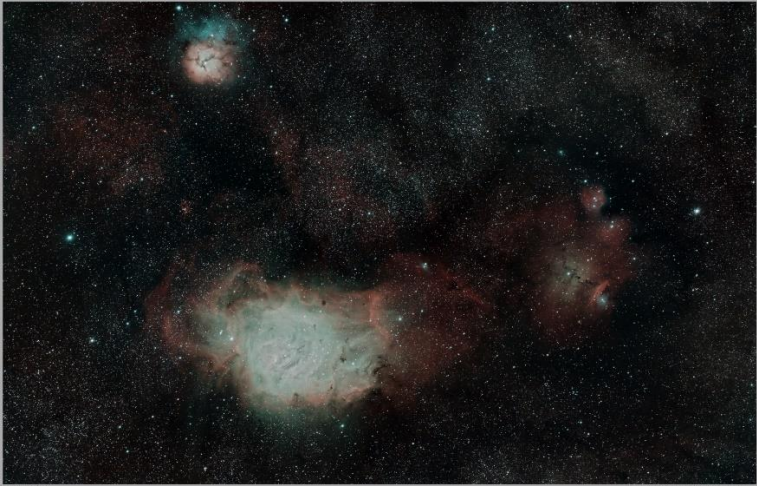
Prospective Imaging Objects – May

Little Ghost (NGC-6369) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Ophiuchus Coordinates: 17h 29' 20" -23° 45' 33" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: NGC-6369 Imaging Window: *12:06 – 03:51 Transit: 02:17 33°	C-11 HD: Primary Focus 
M-14(NGC-6402) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Ophiuchus Coordinates: 17h 37' 36" -03° 14' 43" Close Star: SAO-160006 (zeta Ophi) Catalog Objects: M-14/NGC-6402 Imaging Window: 12:38 – 03:51 Transit: 02:26 53°	C-11 HD: Primary Focus 
Butterfly Cluster(M-6) Config: C11HD ZWO6200MC Type: Open Cluster Constellation: Scorpius Coordinates: 17h 40' 20" -32° 15' 30" Close Star: SAO-210091 (Kaus Aus..) Catalog Objects: M-6/NGC-6405 Imaging Window: *12:50 – 03:51 Transit: 02:28 24°	C-11 HD: Primary Focus 

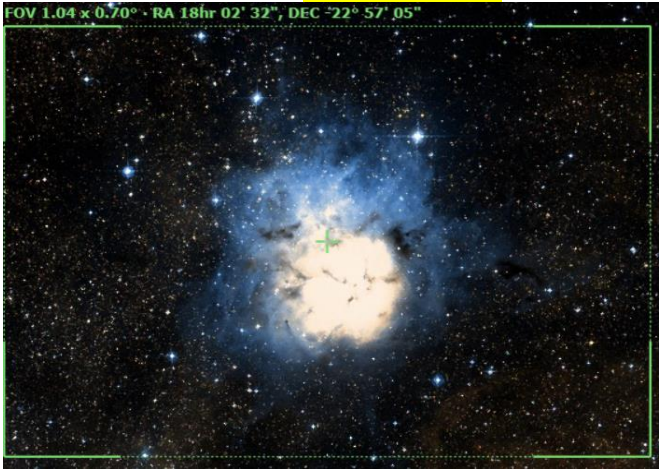
Prospective Imaging Objects – May

Praying Matis Nebula (B-84) Config: C11HD ZWO6200MC Type: Dark Nebula Constellation: Sagittarius Coordinates: 17h 46' 24" -20° 08' 31" Close Star: SAO-210091 (Kaus Aus.) Catalog Objects: B-84/LDN-235 Imaging Window: *12:02 – 03:51 Transit: 02:35 36°	C-11 HD: Primary Focus  Praying Matis Nebula (Dark Nebula B-84) Copyright © 2025, ZWO Optics Inc. All rights reserved. This image is for personal use only. No part of this image may be reproduced without written permission from ZWO Optics Inc.
Box Nebula (NGC-6445) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Sagittarius Coordinates: 17h 49' 15" -20° 00' 32" Close Star: SAO-210091 (Kaus Aus.) Catalog Objects: NGC-6445 Imaging Window: *12:06 – 03:51 Transit: 02:37 37°	C-11 HD: Primary Focus  Box Nebula (NGC-6445) Copyright © 2025, ZWO Optics Inc. All rights reserved. This image is for personal use only. No part of this image may be reproduced without written permission from ZWO Optics Inc.
Ptolemy Cluster(M-7) Config: C11HD ZWO6200MC Type: Open Cluster Constellation: Scorpius Coordinates: 17h 53' 39" -34° 48' 53" Close Star: SAO-210091 (Kaus Aus.) Catalog Objects: M-7/NGC-6475 Imaging Window: *01:33 – 03:46 Transit: 02:42 22°	C-11 HD: Primary Focus 

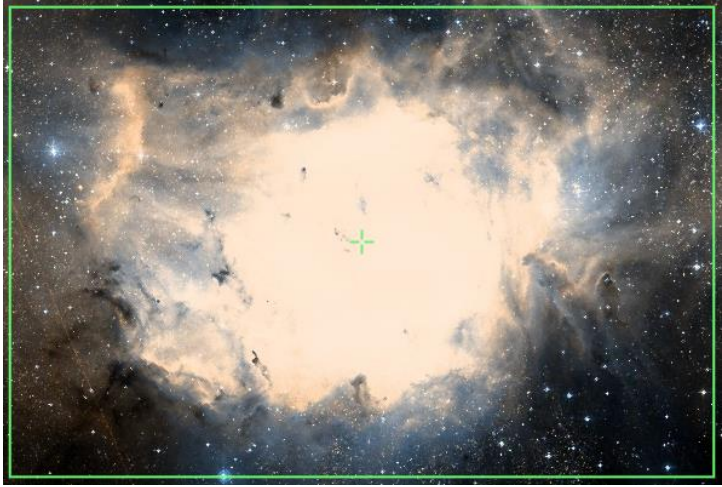
Prospective Imaging Objects – May

M-23(NGC-6494) Config: C11HD ZWO6200MC Type: Open Cluster Constellation: Sagittarius Coordinates: 17h 56' 56" -19° 00' 42" Close Star: SAO-184415 (Antares) Catalog Objects: M-23/NGC-6494 Imaging Window: *12:48 – 03:51 Transit: 02:45 38°	C-11 HD: Primary Focus 
Cat's Eye Nebula(NGC-6543) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Draco Coordinates: 17h 59' 00" 66° 37' 39" Close Star: SAO-18222 (Altais) Catalog Objects: NGC-6543 Imaging Window: 11:22 – 03:51 Transit: 02:47 57°	C-11 HD: Primary Focus  Cat's Eye Nebula (NGC-6543) Constellation: Draco RA = 17h 59m 00s DEC = +66° 37' 39" Size = 40.8 x 27.2 arcmin Orientation: 8.11 deg S of N Pixel scale = 0.441 arcsecond (15.200mas)
Lagoon Region Config: C11-HD HS ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 05' 54" -23° 56' 32" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-8/NGC-6523, M-20, NGC-6544 Imaging Window: *12:48 – 03:51 Transit: 02:52 32°	C-11 HD: HyperStar v4  M-8 Region Constellation: Sagittarius RA = 18h 05m 54s DEC = -23° 56' 32" Size = 2.21 x 2.11 deg Orientation: 8.7° N of E Pixel scale = 0.441 arcsecond (15.200mas)

Prospective Imaging Objects – May

Trifid Nebula(M-20) Config: C11-HD FR ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 02' 32" -22° 57' 05" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-20/NGC-6514 Imaging Window: *12:40 – 03:51 Transit: 02:51 34°	C-11 HD: Focal Reducer 
Trifid Nebula(M-20) Config: C11HD ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 02' 42" -22° 57' 60" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-20/NGC-6514 Imaging Window: *12:40 – 03:51 Transit: 02:51 34°	C-11 HD: Primary Focus  Trifid Nebula (M-20/NGC-6514) Constellation: Sagittarius RA = 18h 02m 42.0s DEC = -22deg 57' 06\" data-bbox="443 590 856 605"/>
Lagoon Nebula (M-8) Config: C11-HD FR ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: Frame1 RA 18h:02':35\" DEC -24°:19':48\" Frame2 RA 18h:05':21\" DEC -24°:20':12\" Rotation: 90° Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-8/NGC-6523, M-20, NGC-6544 Imaging Window: *12:48 – 03:51 Transit: 02:52 32°	C-11 HD: Focal Reducer Composite!-2  Lagoon Nebula (M-8, NGC-6523, LBN 25) Constellation: Sagittarius RA = 18h 02m 35.0s DEC = -24deg 19' 48\" data-bbox="471 878 828 893"/>

Prospective Imaging Objects – May

Lagoon Nebula (M-8) Config: C11- HD FR ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 04' 04" -24° 19' 52" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-8/NGC-6523, M-20, NGC-6544 Imaging Window: *12:48 – 03:51 Transit: 02:52 32°	C-11 HD: Focal Reducer 
Lagoon Nebula (M-8) Config: C11HD ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 04' 02" -24° 20' 56" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-8/NGC-6523, M-20, NGC-6544 Imaging Window: *12:48 – 03:51 Transit: 02:52 32°	C-11 HD: Primary Focus 
M-21(NGC-6531) Config: C11HD ZWO6200MC Type: Open Cluster Constellation: Sagittarius Coordinates: 18h 04' 13" -22° 30' 00" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-21/NGC-6531 Imaging Window: *12:32 – 03:51 Transit: 02:52 34°	C-11 HD: Primary Focus 

Prospective Imaging Objects – May

IC-1274 (IC-1275) Config: C11- HD FR ZWO6200MC Type: Bright Nebula Constellation: Sagittarius Coordinates: 18h 09' 29" -23° 50' 25" Close Star: SAO-209696 (Alnasl) Rotation 90° Catalog Objects: IC-1274 Imaging Window: *12:48 – 03:51 Transit: 02:59 33°	C-11 HD: Focal Reducer 
IC-1274 (IC-1275) Config: C11- HD FR ZWO6200MC Type: Bright Nebula Constellation: Sagittarius Coordinates: 18h 09' 41" -23° 52' 50" Close Star: SAO-184415 (Antares) Imaging Window: *12:48 – 03:51 Transit: 02:59 33°	C-11 HD: Focal Reducer  Bright Nebula IC-1274, IC-1275, IC-4685, NGC-6559 Constellation: Sagittarius RA = 18h 09m 41s DEC = -23deg 52' 50\"
Emerald Nebula (NGC-6572) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Ophiuchus Coordinates: 18h 12' 06" 06° 51' 15" Close Star: SAO-102932 (Rasalhague) Catalog Objects: NGC-6572 Imaging Window: 12:37 – 03:51 Transit: 03:00 64°	C-11 HD: Primary Focus  Planetary Nebula NGC-6572 Constellation: Ophiuchus RA = 18h 12m 06s DEC = 6deg 51' 15\"

Prospective Imaging Objects – May

B-93(LDN-327)

Config: |C11HD|ZWO6200MC|

Type: **Dark Nebula**

Constellation: **Sagittarius**

Coordinates:

18h 16' 12"

-18° 10' 19"

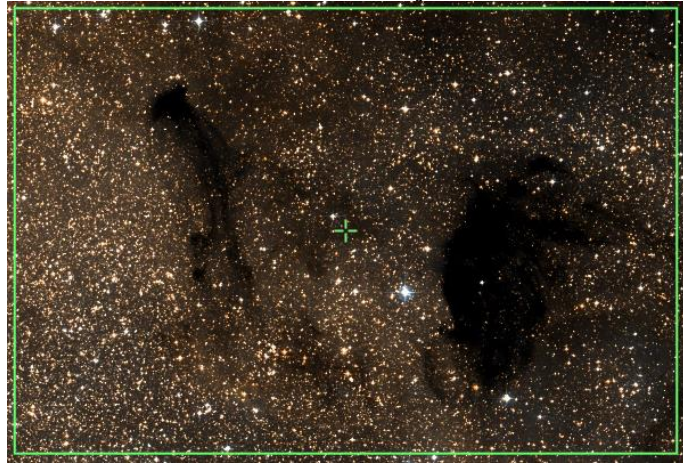
Close Star: **SAO-186841** (Kaus
Borealis)

Catalog Objects: [B-93](#)/LDN-327, B-92

Imaging Window: *12:20 – 03:51

Transit: **03:05** | 30°

C-11 HD: Primary Focus



IC-1283 Region (NGC-6589)

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

ZWO6200MC

Type: **Dark Nebula**

Constellation: **Sagittarius**

Coordinates:

• **Frame 1**

○ **RA: 18h 19' 34"**

○ **DEC: -18° 42' 41"**

• **Frame 2**

○ **RA: 18h 19' 34"**

○ **DEC: -20° 59' 51"**

Close Star: **SAO-186841** (Kaus
Borealis)

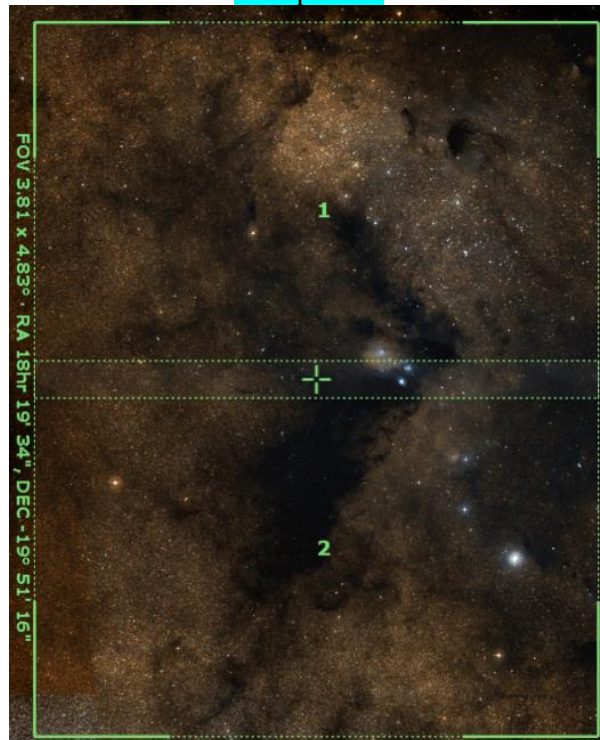
Catalog Objects: [IC-1283](#)/NGC-6589

Imaging Window: *12:32 – 03:51

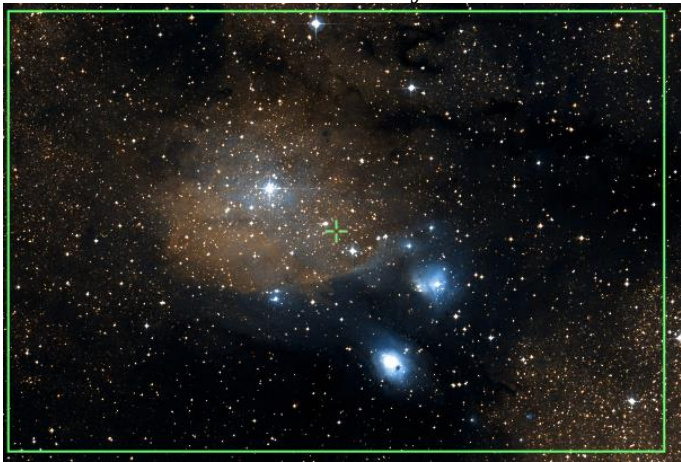
Transit: **03:05** | 37°

C-11 HD: HyperStar v4

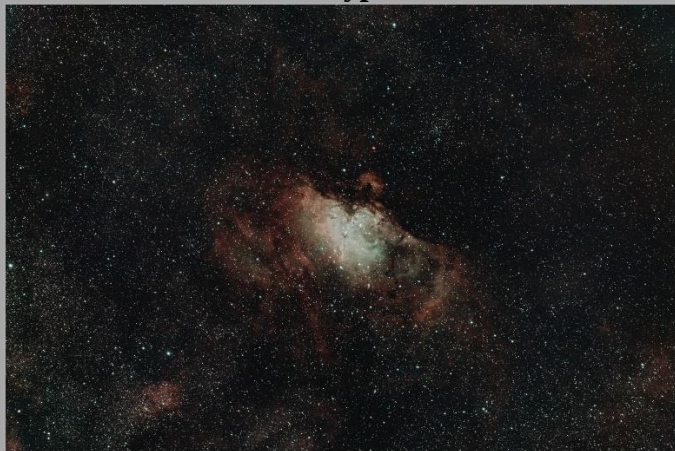
Composite!



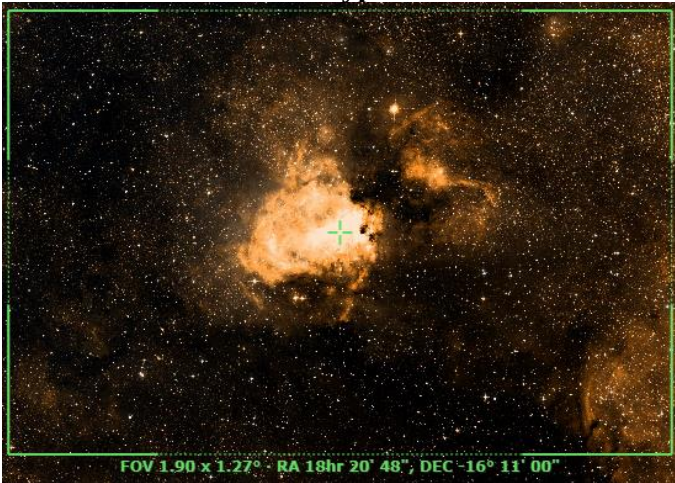
Prospective Imaging Objects – May

IC-1283(NGC-6589) Config: C11- HD FR ZWO6200MC Config: C11HD ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 17' 26" -19° 42' 13" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: IC-1283/NGC-6589 Imaging Window: *12:32 – 03:51 Transit: 03:05 37°	C-11 HD: Focal Reducer 
IC-1283(NGC-6589) Config: C11HD ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 17' 21" -19° 43' 10" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: IC-1283/NGC-6589 Imaging Window: *12:32 – 03:51 Transit: 03:05 37°	C-11 HD: Primary Focus 

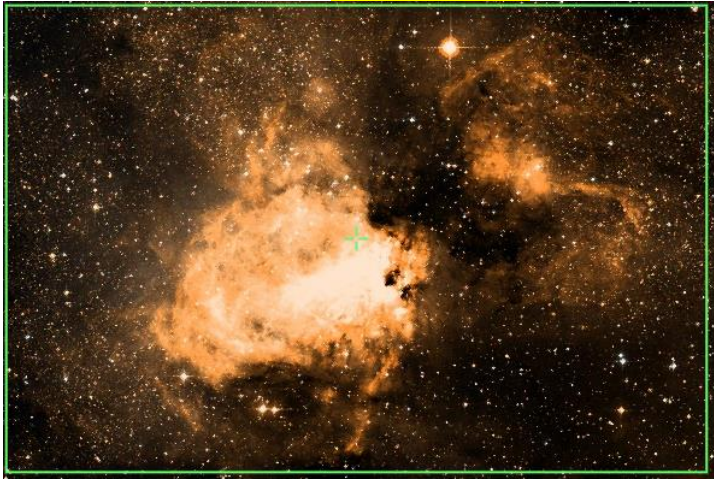
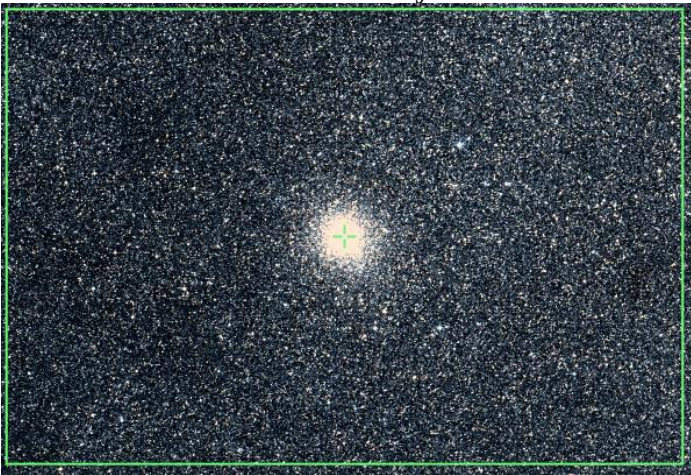
Prospective Imaging Objects – May

Sagittarius Star Cloud(M-24) Config: C11- HD FR ZWO6200MC Type: Open Cluster Constellation: Sagittarius Coordinates: 18h 18' 42" -18° 30' 43" Close Star: SAO-184415 (Antares) Catalog Objects: M-24/IC-4715, NGC-6603 Imaging Window: *12:20 – 03:51 Transit: 03:05 38°	C-11 HD: Focal Reducer 
Eagle Nebula(M-16) Config: C11- HD HS ZWO6200MC Type: Diffuse Nebula Constellation: Serpens Coordinates: 18h 18' 52" -13° 51' 27" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-16/NGC-6611 Imaging Window: *12:36 – 03:51 Transit: 03:07 43°	C-11 HD: HyperStar v4  Eagle Nebula (M-16) Region

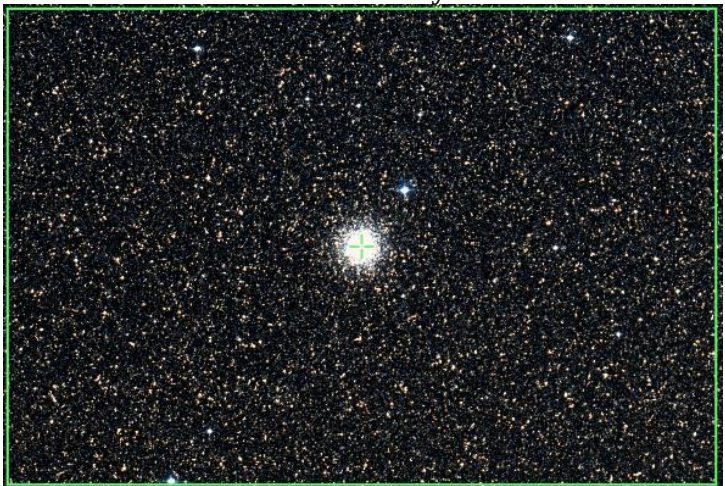
Prospective Imaging Objects – May

Eagle Nebula(M-16) Config: C11- HD FR ZWO6200MC Type: Diffuse Nebula Constellation: Serpens Coordinates: 18h 18' 52" -13° 51' 27" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-16/NGC-6611 Imaging Window: *12:36 – 03:51 Transit: 03:07 43°	C-11 HD: Focal Reducer 
M-18(NGC-6613) Config: C11HD ZWO6200MC Type: Open Cluster Constellation: Sagittarius Coordinates: 18h 19' 58" -17° 06' 06" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-18/NGC-6613 Imaging Window: *12:52 – 03:51 Transit: 03:08 40°	C-11 HD: Primary Focus 
Omega Nebula(M-17) Config: C11- HD HS ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 20' 44" -16° 07' 04" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-17/NGC-6618, NGC-6618 Imaging Window: *12:48 – 03:51 Transit: 03:09 40°	C-11 HD: HyperStar v4 

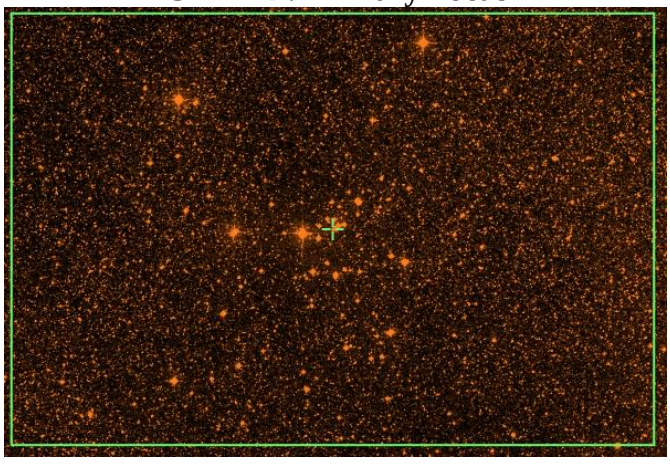
Prospective Imaging Objects – May

Omega Nebula(M-17) Config: C11- HD FR ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 20' 44" -16° 07' 04" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-17/NGC-6618, NGC-6618 Imaging Window: *12:48 – 03:51 Transit: 03:09 40°	C-11 HD: Focal Reducer 
Omega Nebula(M-17) Config: C11HD ZWO6200MC Type: Diffuse Nebula Constellation: Sagittarius Coordinates: 18h 20' 44" -16° 07' 04" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-17/NGC-6618, NGC-6618 Imaging Window: *12:48 – 03:51 Transit: 03:09 40°	C-11 HD: Primary Focus 
M-28(NGC-6626) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Sagittarius Coordinates: 18h 24' 33" -24° 52' 10" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-28/NGC-6626 Imaging Window: *12:28 – 03:51 Transit: 03:13 32°	C-11 HD: Primary Focus 

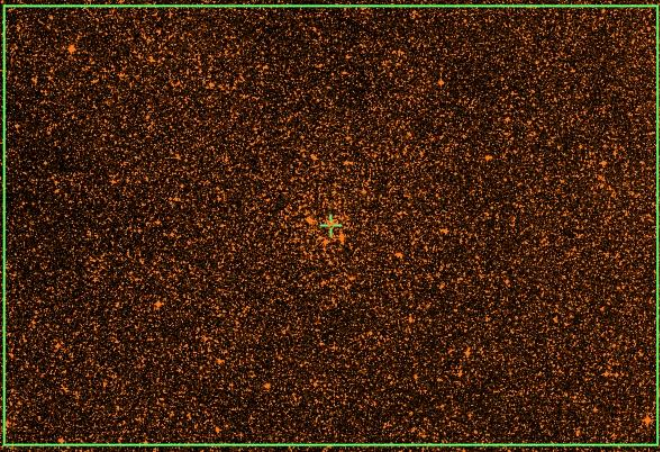
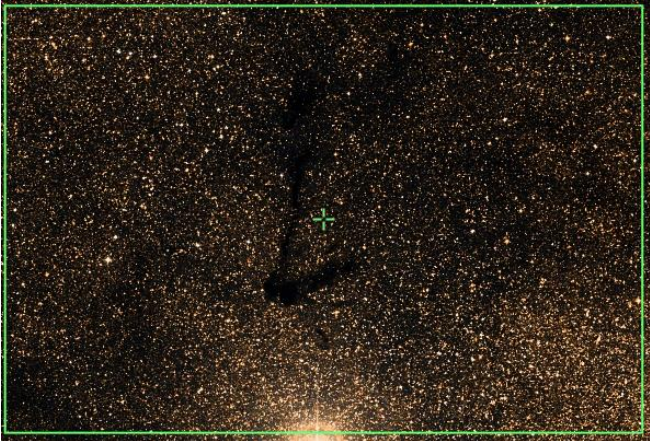
Prospective Imaging Objects – May

NGC-6629 Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Sagittarius Coordinates: 18h 25' 42" -23° 12' 08" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: NGC-6629 Imaging Window: 12:24 – 03:51 Transit: 03:14 33°	C-11 HD: Primary Focus  FOV 0.36" x 0.24" RA 18h 25' 42" DEC -23° 12' 08"
NGC-6633 Config: C11HD ZWO6200MC Type: Open Cluster Constellation: Ophiuchus Coordinates: 18h 27' 15" 06° 30' 30" Close Star: SAO-125122 (Altair) Catalog Objects: NGC-6633 Imaging Window: 12:43 – 03:51 Transit: 03:15 63°	C-11 HD: Primary Focus 
M-69(NGC-6637) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Sagittarius Coordinates: 18h 31' 23" -32° 20' 51" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-69/NGC-6637 Imaging Window: *01:37 – 03:51 Transit: 03:19 24°	C-11 HD: Primary Focus 

Prospective Imaging Objects – May

M-25 (IC-4725) Config: C11HD ZWO6200MC Type: Open Cluster Constellation: Sagittarius Coordinates: 18h 31' 45" -19° 07' 12" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-25 Imaging Window: *01:21 – 03:51 Transit: 03:20 37°	C-11 HD: Primary Focus 
M-22(NGC-6656) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Sagittarius Coordinates: 18h 36' 24" -23° 54' 10" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-22/NGC-6656 Imaging Window: *01:17 – 03:51 Transit: 03:24 33°	C-11 HD: Primary Focus 
M-70(NGC-6681) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Sagittarius Coordinates: 18h 43' 13" -32° 17' 29" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: M-70/NGC-6681 Imaging Window: *01:45 – 03:51 Transit: 03:31 24°	C-11 HD: Primary Focus 

Prospective Imaging Objects – May

M-26(NGC-6694) Config: C11HD ZWO6200MC Type: Open Cluster Constellation: Sagittarius Coordinates: 18h 45' 15" -09° 23' 06" Close Star: SAO-125122 (Altair) Catalog Objects: M-26/NGC-6694 Imaging Window: *01:08 – 03:51 Transit: 3:33 47°	C-11 HD: Primary Focus 
IC-4776 Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Sagittarius Coordinates: 18h 45' 51" -33° 20' 32" Close Star: SAO-186841 (Kaus Borealis) Catalog Objects: IC-4776 Imaging Window: *02:01 – 03:51 Transit: 3:34 23°	C-11 HD: Primary Focus 
B-104(LDN-532) Config: C11HD ZWO6200MC Type: Dark Nebula Constellation: Scutum Coordinates: 18h 47' 09" -04° 28' 45" Close Star: SAO-125122 (Altair) Catalog Objects: B-104/LDN-532 Imaging Window: *01:55 – 01:51 Transit: 3:35 52°	C-11 HD: Primary Focus 

Prospective Imaging Objects – May

Wild Duck Cluster(M-11/NGC-6705) Config: C11HD ZWO6200MC Type: Open Cluster Constellation: Scutum Coordinates: 18h 51' 05" -06° 16' 12" Close Star: SAO-125122 (Altair) Catalog Objects: M-11/NGC-6705 Imaging Window: *01:33 – 03:51 Transit: 3:39 50°	C-11 HD: Primary Focus 
Ring Nebula(M-57/NGC-6720) Config: C11HD ZWO6200MC Type: Planetary Nebula Constellation: Lyra Coordinates: 18h 53' 35" 33° 01' 46" Close Star: SAO-67174 (Vega) Catalog Objects: M-57/NGC-6720 Imaging Window: 12:08 – 03:51 Transit: 03:41 90°	C-11 HD: Primary Focus 
M-54 (NGC-6715) Config: C11HD ZWO6200MC Type: Globular Cluster Constellation: Sagittarius Coordinates: 18h 55' 03" -30° 28' 39" Close Star: SAO-187448 (Nunki) Catalog Objects: M-54/NGC-6715 Imaging Window: *1:41 – 03:51 Transit: 03:43 26°	C-11 HD: Primary Focus 

Prospective Imaging Objects – May

Abell 50 (NGC-6742)

Config: |C11HD|ZWO6200MC|

Type: **Planetary Nebula**

Constellation: **Draco**

Coordinates:

21h 00' 33"

54° 32' 38"

Close Star: **SAO-046872** (Iota Her)

Catalog Objects: [NGC-6742](#)

Imaging Window: **12:01 – 03:51**

Transit: **03:47** | **87°**

C-11 HD: Primary Focus



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Page

Prospective Imaging Objects – May

Imaging Summary May 15, 2025

Astronomical Dusk = 20:57

Astronomical Dawn = 03:51

HyperStar: Nebula

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
HyperStar	Nebula	Nebula	SH 2-1	*10:57-02:44	12:47	20	Scorpius: Diffuse Nebula
HyperStar	Nebula	Nebula	IC-4592	*10:24-03:44	01:01	22	Scorpius: Blue Horsehead Nebula
HyperStar	Nebula	Nebula	IC-4604	*11:01-03:28	01:14	23	Comp2! Scorpius: Ophiuchus Complex
HyperStar	Nebula	Nebula	M-8	*12:48-03:51	02:52	33	Sagittarius: Lagoon Region
HyperStar	Nebula	Nebula	M-16	*12:36-03:51	03:07	39	Serpens: Eagle Nebula
HyperStar	Nebula	Nebula	M-17	*12:48-03:51	03:09	40	Sagittarius: Omega Nebula

HyperStar: Broad Spectrum

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
HyperStar	Broad Spectrum	Galaxies	Group 106	08:57 – 01:00	09:08	03	Canes Venatici: Galaxy Group with M-106
HyperStar	Broad Spectrum	Galaxies	Group 84	08:57 – 12:13	09:14	05	Virgo: Markarian Chain
HyperStar	Broad Spectrum	Galaxies	Group 84-2	08:57 – 12:13	09:14	06	Virgo: Markarian Chain
HyperStar	Broad Spectrum	Galaxies	Group 58	08:57 – 12:22	09:27	10	Virgo: Galaxy Group associated with M-58
HyperStar	Broad Spectrum	Dark Neb	M-62 Region	*12:46-02:44	01:49	26	Ophiuchus: NGC-6266 & Dark Nebula
HyperStar	Broad Spectrum	Dark Neb	LDN-1773	*12:23-03:51	02:09	28	Ophiuchus: Pipe Nebula
HyperStar	Broad Spectrum	Dark Neb	LDN-42	*12:26-03:51	02:21	29	Ophiuchus: Comp 4! Dark Horse Nebula
HyperStar	Broad Spectrum	Dark Neb	LDN-42	*12:26-03:51	02:21	29	Ophiuchus: Comp 2! Dark Horse Nebula
HyperStar	Broad Spectrum	Dark Neb	B-72	*12:02-03:51	02:12	30	Ophiuchus: Snake Nebula
HyperStar	Broad Spectrum	Dark Neb	IC-1283	*12:32-03:51	03:05	37	Sagittarius: IC-1283 Region

Prospective Imaging Objects – May

Imaging Summary May 15, 2025

Astronomical Dusk = 20:57

Astronomical Dawn = 03:51

Focal Reducer: Nebula

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Focal Reducer	Nebula	Nebula	SH 2-9	*11:13-03:08	01:09	22	Scorpius: Diffuse Nebula and Star
Focal Reducer	Nebula	Nebula	M-20	*12:40-03:51	02:51	34	Sagittarius: Trifid Nebula
Focal Reducer	Nebula	Nebula	M-8	*12:48-03:51	02:52	34	Comp2! Sagittarius: Lagoon Nebula
Focal Reducer	Nebula	Nebula	M-8	*12:48-03:51	02:52	34	Sagittarius: Lagoon Nebula
Focal Reducer	Nebula	Nebula	IC-1274	*12:48-03:51	02:59	36	Rot90 Sagittarius: Bright Nebula IC-1274
Focal Reducer	Nebula	Nebula	IC-1274	*12:48-03:51	02:59	36	Sagittarius: Bright Nebula IC-1274
Focal Reducer	Nebula	Nebula	IC-1283	*12:32-03:51	03:05	38	Sagittarius: Diffuse Nebula NGC-6589
Focal Reducer	Nebula	Nebula	M-16	*12:36-03:51	03:07	40	Serpens: Eagle Nebula
Focal Reducer	Nebula	Nebula	M-17	*12:48-03:51	03:09	41	Sagittarius: Omega Nebula

Prospective Imaging Objects – May

Imaging Summary May 15, 2025

Astronomical Dusk = 20:57

Astronomical Dawn = 03:51

Focal Reducer: Broad Spectrum

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Focal Reducer	Broad Spectrum	Galaxies	M-106	08:57 – 01:00	09:08	03	Canes Venatici: Galaxy Pair
Focal Reducer	Broad Spectrum	Galaxies	M-100	08:57 – 12:19	09:12	04	Coma Berenices: Face on Galaxy et. El.
Focal Reducer	Broad Spectrum	Galaxies	M-84 et. El.	08:57 – 12:13	09:14	06	Virgo: Markarian's Chain
Focal Reducer	Broad Spectrum	Galaxies	NGC4631, 4656	08:57 – 01:10	09:31	11	Canes Venatici: Whale and Hockey Stick
Focal Reducer	Broad Spectrum	Galaxies	M-59 Group	08:57 – 12:26	09:31	12	Virgo: Galaxy Group M-59 & M-60
Focal Reducer	Broad Spectrum	Galaxies	NGC-4725 et. El.	08:57 – 01:07	09:39	12	Coma Berenices: Galaxy Group NGC-4725
Focal Reducer	Broad Spectrum	Galaxies	Abell-1656	08:57 – 01:21	09:49	14	Coma Berenices: Coma Galaxy Cluster
Focal Reducer	Broad Spectrum	DN, GC	M-9	*11:25-03:51	02:07	27	Ophiuchus: Globular M-9 and Dark Nebula
Focal Reducer	Broad Spectrum	DN	LDN-1773	*12:23-03:51	02:09	28	Ophiuchus: Pipe Nebula
Focal Reducer	Broad Spectrum	DN	B-72	*12:02-03:51	02:12	30	Ophiuchus: Snake Nebula
Focal Reducer	Broad Spectrum	DN	B-75	*11:49-03:51	02:13	30	Ophiuchus: Bat'leth
Focal Reducer	Broad Spectrum	OC	M-24	*12:20-03:51	03:05	39	Sagittarius: Sagittarius Star Cloud

Prospective Imaging Objects – May

Imaging Summary May 15, 2025

Astronomical Dusk = 20:57

Astronomical Dawn = 03:51

Primary Focus: Nebula

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Nebula	PN	NGC-4361	*08:57-11:17	09:13	05	Corvus: Lawn Sprinkler Nebula
Primary Focus	Nebula	PN	IC-3568	*08:57-02:15	09:22	08	Camelopardalis: Lemon Slice Nebula
Primary Focus	Nebula	PN	IC-4593	10:10 – 03:57	01:00	21	Hercules: White Eyed Pea Planetary Nebula
Primary Focus	Nebula	PN	Abell-39	09:50 – 03:51	01:16	24	Hercules: Perfect Planetary Nebula
Primary Focus	Nebula	PN	NGC-6210	10:14 – 04:58	01:33	25	Hercules: Turtle Nebula
Primary Focus	Nebula	PN	NGC-6309	*10:53-03:51	02:02	27	Ophiuchus: Small PN Box Nebula
Primary Focus	Nebula	PN	NGC-6369	*12:06-03:51	02:17	31	Ophiuchus: Little Ghost Nebula
Primary Focus	Nebula	PN	NGC-6445	*12:06-03:51	02:37	32	Sagittarius: Box Nebula
Primary Focus	Nebula	PN	NGC-6543	11:22 – 03:51	02:47	33	Draco: Cat's Eye Nebula
Primary Focus	Nebula	Nebula	M-20	*12:40-03:51	02:51	34	Sagittarius: Trifid Nebula
Primary Focus	Nebula	Nebula	M-8	*12:48-03:51	02:52	35	Sagittarius: Lagoon Nebula
Primary Focus	Nebula	Nebula	NGC-6572	12:37 – 03:51	03:00	36	Ophiuchus: Emerald Nebula
Primary Focus	Nebula	Nebula	IC-1283	*12:32-03:51	03:05	38	Sagittarius: Nebula NGC-6589
Primary Focus	Nebula	Nebula	M-17	*12:48-03:51	03:09	41	Sagittarius: Omega Nebula
Primary Focus	Nebula	PN	NGC-6629	12:25 – 03:51	03:14	42	Sagittarius: Planetary Nebula (small)
Primary Focus	Nebula	PN	IC-4776	*02:01-03:51	03:34	44	Sagittarius: Sm PN
Primary Focus	Nebula	PN	M-57	12:08 – 03:51	03:41	45	Lyra: Ring Nebula
Primary Focus	Nebula	PN	Abell 50	12:01 – 03:51	03:47	46	Draco: Med PN NGC-6742

Prospective Imaging Objects – May

Imaging Summary May 15, 2025

Astronomical Dusk = 20:57

Astronomical Dawn = 03:51

Primary Focus: Broad Spectrum

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Broad Spectrum	Galaxy	M-98	08:57 – 12:07	09:03	02	Coma Berenices: Barred Spiral Galaxy NGC-4192
Primary Focus	Broad Spectrum	Galaxy	NGC-4236	08:57 – 12:23	09:06	02	Draco: Galaxy NGC-4236
Primary Focus	Broad Spectrum	Galaxy	NGC-4244	08:57 – 12:52	09:06	02	Canes Venatici: Silver Needle Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-99	08:57 – 12:11	09:08	03	Coma Berenices: St. Katherines Wheel
Primary Focus	Broad Spectrum	Galaxy	M-61	08:57 – 11:42	09:11	04	Virgo: Sm/Med Face-on Spiral Galaxy
Primary Focus	Broad Spectrum	Galaxies	Winnecke 4	08:57 -01:01	09:11	04	Ursa Major: Galaxy Cluster
Primary Focus	Broad Spectrum	Galaxies	M-100	08:57 – 12:19	09:12	05	Coma Berenices: Face on Galaxy & other galaxies
Primary Focus	Broad Spectrum	Galaxy	NGC-4449	08:57 – 01:08	09:17	06	Candes Venatici: Irregular Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-49	08:57 – 12:02	09:19	07	Virgo: Elliptical Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-87	08:57 – 12:17	09:20	07	Virgo: Elliptical Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-4490	08:57 – 01:09	09:19	07	Canes Venatici: Cocoon Galaxy
Primary Focus	Broad Spectrum	Galaxies	M-91	08:57 – 12:28	09:24	08	Coma Berenices: Galaxy Pair
Primary Focus	Broad Spectrum	Galaxies	M-89	08:57 – 12:22	09:25	08	Virgo: Elliptical Galaxy & two others
Primary Focus	Broad Spectrum	Galaxy	NGC-4559	08:57 – 12:57	09:25	09	Coma Berenices: Barred Spiral Galaxy
Primary Focus	Broad Spectrum	Galaxies	NGC-4567 et. El.	08:57 – 12:20	09:25	09	Virgo: Galaxy Group
Primary Focus	Broad Spectrum	Galaxy	NGC-4565	08:57 – 12:54	09:25	09	Coma Berenices: Edge on Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-90	08:57 – 12:25	09:26	10	Virgo: Galaxy Group
Primary Focus	Broad Spectrum	Galaxy	M-58	08:57 – 12:22	09:27	10	Virgo: Barred Spiral Galaxy NGC-4579
Primary Focus	Broad Spectrum	Globular	M-68	*08:57-11:17	09:28	11	Hydra: Med Globular Cluster
Primary Focus	Broad Spectrum	Galaxy	M-104	*08:57-11:45	09:29	11	Virgo: Sombrero Galaxy
Primary Focus	Broad Spectrum	Galaxies	NGC-4676 A&B	08:57 – 01:12	09:35	12	Coma Berenices: The Mice
Primary Focus	Broad Spectrum	Galaxies	NGC-4725	08:57 – 01:07	09:39	13	Coma Berenices: Galaxy Group
Primary Focus	Broad Spectrum	Galaxy	M-94	08:57 – 01:29	09:40	13	Canes Venatici: Bright Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-4731	*08:57-12:22	09:40	13	Virgo: Barred Spiral Galaxy

Prospective Imaging Objects – May

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Broad Spectrum	Galaxies	NGC-4762, 4754	08:57 – 12:36	09:42	14	Virgo: Edge on and Elliptical galaxies
Primary Focus	Broad Spectrum	Galaxy	M-64	08:57 – 01:06	09:46	14	Coma Berenices: Bright Galaxy
Primary Focus	Broad Spectrum	Galaxies	Abell-1656	08:57 – 01:21	09:49	15	Coma Berenices: Coma Galaxy Cluster
Primary Focus	Broad Spectrum	Globular	M-53	08:57 – 01:14	10:02	15	Coma Berenices: Med Globular
Primary Focus	Broad Spectrum	Galaxy	NGC-5033	08:57 – 01:47	10:02	15	Canes Venatici: Spiral Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-63	08:57 – 01:54	10:05	16	Canes Venatici: Sunflower Galaxy
Primary Focus	Broad Spectrum	Globular	NGC-5053	08:57 – 01:17	10:05	16	Coma Berenices: Loose Globular
Primary Focus	Broad Spectrum	Galaxy	M-51	08:57 – 02:11	10:19	16	Canes Venatici: Whirlpool Galaxy
Primary Focus	Broad Spectrum	Globular	M-3	08:57 – 02:04	10:31	17	Canes Venatici: Med Globular NGC-5272
Primary Focus	Broad Spectrum	Galaxy	NGC-5395 et. El.	08:57 – 02:33	10:47	17	Canes Venatici: Heron Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-101	08:57 – 02:45	10:52	17	Ursa Major: Pinwheel Galaxy
Primary Focus	Broad Spectrum	Globular	NGC-5466	08:57 – 02:27	10:54	18	Bootes: Med Globular
Primary Focus	Broad Spectrum	Galaxy	M-102	08:57 – 03:47	11:55	18	Draco: Spindel Galaxy
Primary Focus	Broad Spectrum	Galaxy	NGC-5905, 5908	08:57 – 03:51	12:04	18	Draco: Galaxy Pair
Primary Focus	Broad Spectrum	Galaxy	NGC-5907	08:57 – 03:51	12:04	19	Draco: Splinter Galaxy
Primary Focus	Broad Spectrum	Globular	M-5	09:52 – 02:28	12:07	19	Serpens: Med Globular
Primary Focus	Broad Spectrum	Galaxy	NGC-5985 Et. El.	08:57 – 03:51	12:28	19	Draco: Draco Trio
Primary Focus	Broad Spectrum	Galaxy	NGC-6027 A-E	09:35 – 03:51	12:48	20	Serpens: Sefert's Sextet
Primary Focus	Broad Spectrum	Galaxy	Abell 2151	09:48 – 03:51	12:54	20	Hercules: Hercules Galaxy Cluster
Primary Focus	Broad Spectrum	Galaxy	NGC-6058	09:10 – 03:51	12:53	21	Hercules: Small Planetary Nebula
Primary Focus	Broad Spectrum	Galaxy	Arp-188	09:08 – 03:51	12:54	21	Draco: Tadpole Galaxy
Primary Focus	Broad Spectrum	Galaxy	M-80	*10:49-03:20	01:05	22	Scorpius: Med Globular Cluster
Primary Focus	Broad Spectrum	Galaxy	M-4	*11:25-12:56	02:56	23	Scorpius: Large Globular Cluster
Primary Focus	Broad Spectrum	Globular	M-107	*10:45-03:51	01:21	24	Ophiuchus: Sm/Met Globular Cluster
Primary Focus	Broad Spectrum	Globular	M-13	09:52 – 03:51	01:30	24	Hercules: Hercules Cluster
Primary Focus	Broad Spectrum	Globular	M-12	11:41 – 03:37	01:35	25	Ophiuchus: Med Globular Cluster NGC-6218
Primary Focus	Broad Spectrum	Globular	M-10	12:03 – 03:34	01:45	25	Ophiuchus: Med Globular Cluster NGC-6254
Primary Focus	Broad Spectrum	Globular	M-62	*12:46-02:44	01:49	26	Ophiuchus: Med/Large Globular NGC-6266

Prospective Imaging Objects – May

Configuration	Class	Type	Object	Imaging Window	Transit	Page Ref	Comments
Primary Focus	Broad Spectrum	Globular	M-19	*12:02-03:51	01:51	26	Ophiuchus: Med/Large Globular NGC-6273
Primary Focus	Broad Spectrum	Globular	M-92	10:21 – 03:51	02:05	27	Hercules: Med Globular NGC-6341
Primary Focus	Broad Spectrum	Globular	M-9	*11:25-03:51	02:07	28	Ophiuchus: Med Globular NGC-6333
Primary Focus	Broad Spectrum	Globular	M-14	12:38 – 03:51	02:26	31	Ophiuchus: Med Globular NGC-6402
Primary Focus	Broad Spectrum	OC	M-6	*12:50-03:51	02:28	31	Scorpius: Butterfly Cluster
Primary Focus	Broad Spectrum	DN	B-84	*12:02-03:51	02:35	32	Sagittarius: Praying Matis Nebula
Primary Focus	Broad Spectrum	OC	M-23	*12:48-03:51	02:45	33	Sagittarius: Open cluster NGC=6494
Primary Focus	Broad Spectrum	OC	M-21	*12:32-03:51	02:52	35	Sagittarius: Open Cluster NGC-6531
Primary Focus	Broad Spectrum	DN	B-93	*12:20-03:51	03:05	37	Sagittarius: Dark Nebula LDN-327
Primary Focus	Broad Spectrum	OC	M-18	*12:52-03:51	03:08	40	Sagittarius: Open Cluster NGC-6613
Primary Focus	Broad Spectrum	GC	M-28	*12:28-03:51	03:13	41	Sagittarius: Globular Cluster NGC-6626
Primary Focus	Broad Spectrum	OC	NGC-6633	12:43 – 03:51	03:15	42	Ophiuchus: Open Cluster
Primary Focus	Broad Spectrum	GC	M-69	*01:37-03:51	03:19	42	Sagittarius: Globular Cluster NGC-6637
Primary Focus	Broad Spectrum	OC	M-25	*01:21-03:51	03:20	43	Sagittarius: Open Cluster IC-4725
Primary Focus	Broad Spectrum	GC	M-22	*01:17-03:51	03:24	43	Sagittarius: Med Globular Cluster NGC-6656
Primary Focus	Broad Spectrum	GC	M-70	*01:45-03:51	03:31	43	Sagittarius: Sm Globular NGC-6681
Primary Focus	Broad Spectrum	OC	M-26	*01:08-03:51	03:33	44	Sagittarius: Open Cluster NGC-6694
Primary Focus	Broad Spectrum	DN	B-104	*01:55-01:51	03:35	44	Scutum: Reverse Check LDN-532
Primary Focus	Broad Spectrum	OC	M-11	*01:33-03:51	03:39	45	Scutum: Wild Duck Cluster
Primary Focus	Broad Spectrum	GC	M-54	*01:41-03:51	03:43	45	Sagittarius: Sm Globular NGC-6713