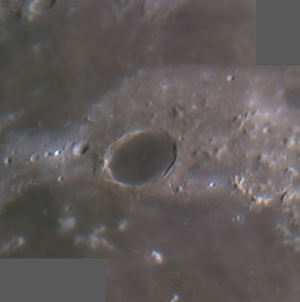
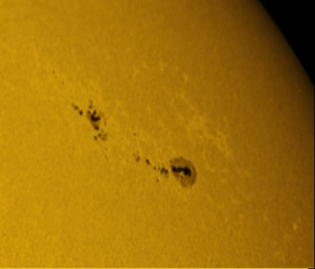
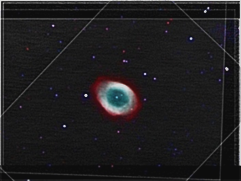
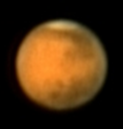
# 2010 Observing Notes



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## January

### 2010 Jan 9 (Jan 10 UT): M33

Last Updated 5/8/2011

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Jan 09 | 598 | M33 - Pinwheel Galaxy | GX | 62.0 | 62.0 | 5.7 | 14.7 | 22.2 | Tri |  |  | 0 | 1 | Imaging. Took 120 min. image series (C: 45, R: 30, G: 15, B: 15) with ST2000 and C8 at 1260mm (f/6.3) with 1x1 binning. Tccd=-20C, no fan. Seeing 2-3/5, transparency 5/5. Had trouble with filters. Ended up that I think I took 5 clear images (reds were actually clear, despite saying red) and the blue/greens, its unsure if they are different. Combined seeing and guiding was poor enough to create large stars. This data will be good only for luminance. | 2010 Jan 11 |

**Future Work:**

* More integration time with the above configuration to get a deeper image.

### 2010 Jan 10 (Jan 11 UT): M33, NGC1999

Last Updated 8/05/2011

|  |  |
| --- | --- |
| C:\Astronomy\IMAGES\2010\01\10\M33_LVAS.JPG | C:\Astronomy\IMAGES\2010\01\10\NGC1999_sLRGB_sum120min_Filtered.jpg |
| M33\_LVAS.JPG | NGC1999\_sLRGB\_sum120min\_Filtered.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Jan 10 | 598 | M33 - Pinwheel Galaxy | GX | 62.0 | 62.0 | 5.7 | 14.7 | 22.2 | Tri |  |  | 0 | 1 | Imaging. Took 75 min. image series (C: 15, R: 30, G: 15, B: 15) with ST2000 and C8 at 1260mm (f/6.3) with 1x1 binning. Tccd=-20C, no fan. Seeing 4/5, transparency 5/5. Fabulous night!! Took ST2000 off C8 and tested filter wheel - no problems! Attached 'pointer' to camera for C8 to better reproduce PAs when imaging. Rebalanced in Dec to achieve better guiding. Very nice images. | 2010 Jan 11 |
| 2010 Jan 10 | 1999 |  | GN | 2.0 | 2.0 |  |  |  | Ori |  |  | 0 | 1 | Imaging: Took 120 min CRGB series (60:30:15:15) with ST2000 and C8 at 1260mm (f/6.3). Binned 1x1. Tccd=-20C, no fan. Transparency 5/5, seeing 4/5. Fabulous night! | 2010-Jan-26 |

**Future Work (M33):**

* May want to make this a primary observing target for fall 2011
* Aesthetic
  + Create mosaic image using C8 at 1260mm and ST2000 (see mosaic planning chart in CDC).
  + Integrate mosaic or wide-field image and have a large-scale photo print made.
* Analysis
  + Do multi-wavelength study using NIR-Ha-R-G-B-NUV bands with C8 at 1260mm and ST2000. This could be very interesting with regard to star forming regions.
  + Do comparative multi-band photometry of star forming regions and write up an analysis section.
  + Do integral multi-wavelength photometry to incorporate into galaxy “H-R” diagram study.
  + Do a radial distribution analysis of Ha regions similar to that done for M101. Would work much better if I have Ha images rather than relying on the R band and visual identification.
* Documentation
  + Update M33 write up to: Update personal write up and analysis, including legacy write up; edit down excerpts from Wikipedia and other web sources

### 2010 Jan 11 (Jan 12 UT): Mars, Castor

Last Updated 5/8/2011

|  |  |
| --- | --- |
| C:\Astronomy\IMAGES\2010\01\11\Mars1_120sec_Grad5pix_Ref50frames_Stack600_Wavelets_Stack0thru5_ContBrtGamRGBAlign_Small.jpg | C:\Astronomy\IMAGES\2010\01\11\Castor_Rot1_120sec_0000_Ref50frames_Stack600_Wavelets_2x_Half.jpg |
| Mars1\_120sec\_Grad5pix\_Ref50frames\_Stack600\_Wavelets\_Stack0thru5\_ContBrtGamRGBAlign\_Small.jpg | Castor\_Rot1\_120sec\_0000\_Ref50frames\_Stack600\_Wavelets\_2x\_Half.jpg |

**Mars**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Ill. Frac.** | **CM** | **LS** | **Size1** | **Mag, Height** | **mag/as2** | **Mars** | **Phobos** | **Deimos** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Jan-12 04:50 | 0.02 | 266.9 | 37 | 13.6 | -1.0 | 4.7 | X |  |  | 34.0 | 3/5 | 0 | 1 | Imaging: Took 12 minutes of video (6x2min) with ToUcam 840 and ST2000 at 5500mm (f27.5). Seeing was very good (4/5) and transparency okay (3/5). Center time of imaging was 9:50pm MST (uncorrected for offsets). Seeing seemed to degrade substantially as the evening wore on so I did not attempt imaging again later as I originally planned. | 2010-Jan-12 |

“Mars1” camera settings were as follows: Brightness 60%, Gamma 0, Contrast 50%, Saturation 75%, Exposure: 1/50 sec, Gain 80%. Processing in Registax 5 used a gradient filter set to 5 pixels and a 50 frame reference for optimization. Sharpening used mild to moderate wavelet settings.

**Castor**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1** | **Size2** | **Mag** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Jan 11 |  | Alpha Gemorium Castor | DS | 1.0 | 2.0 | 4.7 | 3.45 | 0.97 | Gem |  |  | 0 | 2 | Imaging: Took 2 minutes of video with ToUcam at 30fps and C8 at 5500mm (f/27.5). Seeing was predicted to be excellent, but I would rate it only 3/5. Transparency was 3/5. | 2010-Jan-12 |

**Video Times:**

01/11/2010 09:45 PM 1,660,826,112 Mars1\_120sec\_0000.avi

01/11/2010 09:47 PM 1,660,826,112 Mars1\_120sec\_0001.avi

01/11/2010 09:49 PM 1,660,364,800 Mars1\_120sec\_0002.avi

01/11/2010 09:51 PM 1,659,442,176 Mars1\_120sec\_0003.avi

01/11/2010 09:53 PM 1,660,364,800 Mars1\_120sec\_0004.avi

01/11/2010 09:56 PM 1,658,058,240 Mars1\_120sec\_0005.avi

01/11/2010 10:42 PM 1,661,287,424 Castor\_Rot1\_120sec\_0000.avi

01/11/2010 10:43 PM 69,725,696 Castor\_Rot1\_5sec\_drift\_0000.avi

01/11/2010 10:44 PM 68,803,072 Castor\_Rot1\_5sec\_drift\_0001.avi

### 2010 Jan 13 (Jan 13 UT): Sun (visual)

Last Updated 5/8/2011

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Body Name** | **Body Type** | **Feature Name(s)** | **Feature Type(s)** | **Size1** | **Size2** | **Mag, Height** | **mag/as2** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Jan-13 19:00 | Sun | Star | AR 11040 | Sunspots |  |  |  |  |  |  | 1 | 0 | Visual: (with ToUcam 840). First light for new solar filter. Looked at region 1040 through heavy clouds. Resolution and contrast poor (to be expected under the conditions). Plenty of signal for 2000mm and 5500mm FLs. | 2010-Jan-15 |

### 2010 Jan 15 (Jan 15-16 UT): Sun, NGC1999, Sirius

Last Updated 5/8/2011

|  |  |  |
| --- | --- | --- |
| C:\Astronomy\IMAGES\2010\01\15\R1040LVAS.JPG | C:\Astronomy\IMAGES\2010\01\15\N1999LVAS.JPG | C:\Astronomy\IMAGES\2010\01\15\SIRIUS_RED_10MS_STACK42_LOG.jpgC:\Astronomy\IMAGES\2010\01\15\SIRIUS_RED_10MS_STACK42_LOG_RotFilter.jpg |
| R1040LVAS.JPG | NGC1999 (Filename?) | SIRIUS\_RED\_10MS\_STACK42\_LOG.jpg  SIRIUS\_RED\_10MS\_STACK42\_LOG\_RotFilter.jpg |

**Sun**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Body Name** | **Body Type** | **Feature Name(s)** | **Feature Type(s)** | **Size1** | **Size2** | **Mag, Height** | **mag/as2** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Jan-15 19:15 | Sun | Star | AR 11040 | Sunspots, faculae |  |  |  |  |  |  | 0 | 1 | Imaging: Took 10min video (5x2min; 4min before refocusing, 6 min after) with ToUcam 840 and C8 at 2000mm (f/10). Seeing was 2-3/5, transparency 4/5. Very good contrast and signal. | 2010-Jan-15 |

First successful image of the of an active region in white light.

**NGC 1999**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1** | **Size2** | **Mag** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Jan 15 | 1999 |  | GN | 2.0 | 2.0 |  |  |  | Ori |  |  | 0 | 1 | Imaging: Took 120 min CRGB series (60:30:15:15) with ST2000 and C8 at 1260mm (f/6.3). Binned 1x1. Tccd=-20C, no fan. Transparency 4/5, seeing 3/5. | 2010-Jan-26 |

The image above shows is the result of combined data from 1/10/2010 and today.

**Sirius**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1** | **Size2** | **Mag** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Jan 15 |  | Alpha CMa Sirius | DS | -1.0 | 8.0 | 8.4 | 2.11 | 0.89 | CMa |  |  | 0 | 1 | Imaging: (Lucky) 100 images through red filter with 10ms exposures with C8 at 1260mm (f/6.3) and ST2000. Stacked best 42 images. | 2010-Jan-28 |

The rotational filtered image was created with the MaximDL Larson-Sekanina filter set at 0.1 deg. There is another rotationally filtered image somewhere that I created using IDL.

### 2010 Jan 16 (Jan 16 UT): Sun

Last Updated 5/8/2011

|  |
| --- |
| C:\Astronomy\IMAGES\2010\01\16\Region_1040_120sec_Stack600_WaveletsSun1_Stack012_Wavelets_Adobe.jpg |
| Region\_1040\_120sec\_Stack600\_WaveletsSun1\_Stack012\_Wavelets\_Adobe.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Body Name** | **Body Type** | **Feature Name(s)** | **Feature Type(s)** | **Size1** | **Size2** | **Mag, Height** | **mag/as2** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Jan-16 19:15 | Sun | Star | AR 11040 | Sunspots, faculae |  |  |  |  |  |  | 1 | 1 | Imaging: Took 6min video with ToUcam 840 and C8 at 2000mm (f/10). Seeing was 2-3/5, transparency 4/5. Very good contrast and signal. Made assisted visual observation at 5500mm, but recorded video was too poor to be worth processing. | 2010-Jan-26 |

### 2010 Jan 30 (Jan 31 UT): Mars, Eta Cas, STF3062, Iot Cas, Castor, 38 Gem, Eta Gem

Last Updated 5/27/2011

**Mars**

|  |  |
| --- | --- |
| **C:\Astronomy\IMAGES\2010\01\30\Mars1_5500mm_120sec_DarkStack600Ref50_WaveletsMars1_Stack0thru5Drizzle_WaveletsMars3_HalfSize.jpg** | **C:\Astronomy\IMAGES\2010\01\30\Mars2_5500mm_120sec_DarkStack600Ref50_WaveletsMars1_Stack4of5Drizzle_WavletsMars2_HalfSize.jpg** |
| Mars1\_5500mm\_120sec\_DarkStack600Ref50\_WaveletsMars1\_Stack0thru5Drizzle\_WaveletsMars3\_HalfSize.jpg | Mars2\_5500mm\_120sec\_DarkStack600Ref50\_WaveletsMars1\_Stack4of5Drizzle\_WavletsMars2\_HalfSize.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Ill. Frac.** | **CM** | **LS** | **Size1** | **Mag, Height** | **mag/as2** | **Mars** | **Phobos** | **Deimos** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Jan-31 02:55 | 0.00 | 72.7 | 45 | 14.1 | -1.3 | 4.4 | X |  |  | 33.0 | 3/5 | 0 | 1 | Imaging: Took TBD minutes of video (TBDx2min) with ToUcam 840 and ST2000 at 5500mm (f27.5). Seeing was very good (5/5) and transparency poor and degrading (2/5). Two movie series were made (06:17 and 06:45 UT Jan 31). The latter was 8 min and the former was 10min (TBR). | 2010-Jan-12 |
| 2010-Jan-31 04:33 | 0.00 | 96.6 | 45 | 14.1 | -1.3 | 4.4 | X |  |  | 52.0 | 3/5 | 0 | 1 | Imaging: Took TBD minutes of video (TBDx2min) with ToUcam 840 and ST2000 at 5500mm (f27.5). Seeing was very good (5/5) and transparency poor and degrading (2/5). Two movie series were made (06:17 and 06:45 UT Jan 31). The latter was 8 min and the former was 10min (TBR). | 2010-Jan-12 |

|  |  |  |
| --- | --- | --- |
| C:\Astronomy\IMAGES\2010\01\30\EtaCas_5500mm_120sec__Rot1_0000_DarkStack600Ref50Gamma2xLog_HalfSize.jpg | C:\Astronomy\IMAGES\2010\01\30\STF3062_5500mm_120sec_Rot1_0000_DarkStack600Ref50_WaveletsMars1_2x_HalfSize.jpg | C:\Astronomy\IMAGES\2010\01\30\IotCas_5500mm_12sec_Rot1_0000_DarkStack600Ref502x_HalfSize.jpg |
| EtaCas\_5500mm\_120sec\_\_Rot1\_0000\_DarkStack600Ref50Gamma2xLog\_HalfSize.jpg | STF3062\_5500mm\_120sec\_Rot1\_0000\_DarkStack600Ref50\_WaveletsMars1\_2x\_HalfSize.jpg | IotCas\_5500mm\_12sec\_Rot1\_0000\_DarkStack600Ref502x\_HalfSize.jpg |
| C:\Astronomy\IMAGES\2010\01\30\Castor_5500mm_120sec_Rot1_0000_DarkStack600Ref502x_Stretch_HalfSize.jpg | C:\Astronomy\IMAGES\2010\01\30\38Gem_5500mm_120sec_Rot1_0000_DarkStack600Ref50_WaveletsMars1_Log_HalfSize.jpg | C:\Astronomy\IMAGES\2010\01\30\EtaGem_5500mm_120sec_Rot1_0000_DarkStack600Ref50_WaveletsX.jpg |
| Castor\_5500mm\_120sec\_Rot1\_0000\_DarkStack600Ref502x\_Stretch\_HalfSize.jpg | 38Gem\_5500mm\_120sec\_Rot1\_0000\_DarkStack600Ref50\_WaveletsMars1\_Log.jpg | EtaGem\_5500mm\_120sec\_Rot1\_0000\_DarkStack600Ref50\_WaveletsX.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Jan 30 |  | Eta Cas STF60 | DS | 3.5 | 7.4 | 13.0 | 3.26 | 0.96 | Cas |  |  | 0 | 1 | Imaging: Took 1x120 sec video with ToUcam and C8 at 5500mm (f/27.5). Seeing was about the best I've ever seen it (5/5). Transparency was poor 2/5 and worsening. | 2010 Feb 01 |
| 2010 Jan 30 |  | STF3062 | DS | 6.4 | 7.3 | 1.5 | 0.41 | 0.60 | Cas |  |  | 0 | 1 | Imaging: Took 1x120 sec video with ToUcam and C8 at 5500mm (f/27.5). Seeing was about the best I've ever seen it (5/5). Transparency was poor 2/5 and worsening. Could clearly see the star was double in the live video. | 2010 Feb 01 |
| 2010 Jan 30 |  | Iota Cas STF262Aa-B | DS | 4.6 | 6.9 | 2.5 | 1.25 | 0.78 | Cas |  |  | 0 | 1 | Imaging: Took 1x120 sec video with ToUcam and C8 at 5500mm (f/27.5). Seeing was about the best I've ever seen it (5/5). Transparency was poor 2/5 and worsening. Could clearly see the star was double in the live video. | 2009 Jan 30 |
| 2010 Jan 30 |  | Alpha Gemorium Castor | DS | 1.0 | 2.0 | 4.7 | 3.45 | 0.97 | Gem |  |  | 0 | 1 | Imaging: Took 1x120 sec video with ToUcam and C8 at 5500mm (f/27.5). Seeing was about the best I've ever seen it (5/5). Transparency was poor 2/5 and worsening. | 2010-Feb-01 |
| 2010 Jan 30 |  | Eta Gem | DS | 3.5 | 6.2 | 1.6 | -0.25 | 0.44 | Gem |  |  | 0 | 1 | Imaging: Took 1x120 sec video with ToUcam and C8 at 5500mm (f/27.5). Seeing was about the best I've ever seen it (5/5). Transparency was poor 2/5 and worsening. | 2010-Feb-01 |
| 2010 Jan 30 |  | 38 Gem | DS | 4.0 | 7.0 | 5.1 | 2.45 | 0.92 | Gem |  |  | 0 | 1 | Imaging: Took 1x120 sec video with ToUcam and C8 at 5500mm (f/27.5). Seeing was about the best I've ever seen it (5/5). Transparency was poor 2/5 and worsening. | 2010-Feb-01 |

**Video file times:**

01/30/2010 07:49 PM 1,646,064,640 Mars1\_5500mm\_120sec\_0000.avi

01/30/2010 07:51 PM 1,653,445,120 Mars1\_5500mm\_120sec\_0001.avi

01/30/2010 07:53 PM 1,642,374,144 Mars1\_5500mm\_120sec\_0002.avi

01/30/2010 07:56 PM 1,645,142,016 Mars1\_5500mm\_120sec\_0003.avi

01/30/2010 07:58 PM 1,651,138,560 Mars1\_5500mm\_120sec\_0004.avi

01/30/2010 08:00 PM 1,627,151,360 Mars1\_5500mm\_120sec\_0005.avi

01/30/2010 08:03 PM 68,341,760 Mars1\_Dark\_5500mm\_5sec\_0000.avi

01/30/2010 08:15 PM 1,636,838,400 EtaCas\_5500mm\_120sec\_\_Rot1\_0000.avi

01/30/2010 08:16 PM 110,322,688 EtaCas\_Drift\_5500mm\_8sec\_Rot1\_0000.avi

01/30/2010 08:26 PM 1,601,779,712 STF3062\_5500mm\_120sec\_Rot1\_0000.avi

01/30/2010 08:26 PM 67,880,448 STF3062\_Dark\_5500mm\_5sec\_Rot1\_0000.avi

01/30/2010 08:32 PM 1,646,064,640 IotCas\_5500mm\_12sec\_Rot1\_0000.avi

01/30/2010 08:33 PM 110,322,688 IotCas\_Drift\_5500mm\_8sec\_Rot1\_0000.avi

01/30/2010 09:04 PM 1,639,606,272 Castor\_5500mm\_120sec\_Rot1\_0000.avi

01/30/2010 09:05 PM 69,264,384 CastorDrift\_5500mm\_5sec\_Rot1\_0000.avi

01/30/2010 09:06 PM 67,880,448 CastorDrift\_5500mm\_5sec\_Rot1\_0001.avi

01/30/2010 09:12 PM 1,636,838,400 38Gem\_5500mm\_120sec\_Rot1\_0000.avi

01/30/2010 09:19 PM 1,638,222,336 EtaGem\_5500mm\_120sec\_Rot1\_0000.avi

01/30/2010 09:20 PM 68,803,072 EtaGem\_Drift\_5500mm\_5sec\_Rot1\_0000.avi

01/30/2010 09:21 PM 68,341,760 Castor\_Dark\_5500mm\_5sec\_Rot1\_0000.avi

01/30/2010 09:27 PM 1,645,603,328 Mars2\_5500mm\_120sec\_Rot1\_0000.avi

01/30/2010 09:30 PM 1,640,990,208 Mars2\_5500mm\_120sec\_Rot1\_0001.avi

01/30/2010 09:33 PM 1,642,374,144 Mars2\_5500mm\_120sec\_Rot1\_0002.avi

01/30/2010 09:36 PM 1,642,835,456 Mars2\_5500mm\_120sec\_Rot1\_0003.avi

01/30/2010 09:39 PM 1,647,448,064 Mars2\_5500mm\_120sec\_Rot1\_0004.avi

01/30/2010 09:41 PM 66,957,824 Mars2\_Dark25\_5500mm\_5sec\_Rot1\_0000.avi

01/30/2010 09:41 PM 68,341,760 Mars2\_Dark33\_5500mm\_5sec\_Rot1\_0000.avi

## February

### 2010 Feb 04 (Feb 05 UT): Cone Nebula

Last Updated 8/04/2011

|  |
| --- |
| C:\Astronomy\IMAGES\2010\02\04\ConeWide_RGB_sum90min_Adobe_LVGamm32.jpg |
| ConeWide\_RGB\_sum90min\_Adobe\_LVGamm32.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1** | **Size2** | **Mag** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Feb 04 | 2264 | Cone Neb., X-mas Tree cluster | GN | 60.0 | 60.0 | 3.9 | 12.8 |  | Mon |  |  | 0 | 1 | Imaging: Took 90 min. wide angle RGB image series (50:20:20) with ST2000 and 135mm lens (f/2.5). Binned 1x1. Tccd=-20C (no fan). Transparency: 4/5. Seeing 3/5. | 2010-Feb-10 |

Should identify the other deep sky objects in the field.

### 2010 Feb 09 (Feb 09 UT): Sun

Last Updated 10/31/2011

|  |  |
| --- | --- |
| C:\Astronomy\IMAGES\2010\02\09\Region11045_2000mm_MosaicWithLimb-Halfsize.jpg | |
| Region11045\_2000mm\_MosaicWithLimb-Halfsize.jpg | |
| C:\Astronomy\IMAGES\2010\02\09\Region11046_2000mm_120sec_DarkStack600Ref25_WaveletsSun1_Stack0and1_Wavelets_Adobe-HalfSize.jpg | C:\Astronomy\IMAGES\2010\02\09\Region11047_2000mm_120sec_0000_DarkStack600Ref25_WaveletsSun1_Adobe-HalfSize.jpg |
| Region11046\_2000mm\_120sec\_DarkStack600Ref25\_WaveletsSun1\_Stack0and1\_Wavelets\_Adobe-HalfSize.jpg | Region11047\_2000mm\_120sec\_0000\_DarkStack600Ref25\_WaveletsSun1\_Adobe-HalfSize.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Body Name** | **Body Type** | **Feature Name(s)** | **Feature Type(s)** | **Size1** | **Size2** | **Mag, Height** | **mag/as2** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Feb-09 19:15 | Sun | Star | AR 11045, AR 11046, AR 11047 | Sunspots, faculae |  |  |  |  |  |  | 0 | 3 | Imaging: Took TBD min video with ToUcam 840 and C8 at 2000mm (f/10). Seeing was 2-3/5, transparency 4/5. Took sequences of three active regions (11045 on the NW quadrant, 11046 on the NE quadrant, and 11047 on the SE quadrant). Also took drift movie of 11045 to measure plate scale and sky-coords orientation. Made assisted visual observation at 5500mm, but recorded video was too poor to be worth processing. | 2010-Feb-10 |

### 2010 Feb 09 (Feb 10 UT): Mars

Last Updated 8/05/2011

|  |
| --- |
| C:\Astronomy\IMAGES\2010\02\09\Mars2_5500mm_120sec_DarkStack300Ref25_WaveletsMars1_Stack0thru4Drizzle_WaveletsMars2_Adobe.jpg |
| Mars2\_5500mm\_120sec\_DarkStack300Ref25\_WaveletsMars1\_Stack0thru4Drizzle\_WaveletsMars2\_Adobe.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Ill. Frac.** | **CM** | **LS** | **Size1** | **Mag, Height** | **mag/as2** | **Mars** | **Phobos** | **Deimos** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Feb-10 04:39 | 0.01 | 10.7 | 50 | 13.7 | -1.1 | 4.6 | X |  |  | 63.0 | 3/5 | 0 | 1 | Imaging: Took 12 minutes of video (6x2min) with ToUcam 840 and ST2000 at 5500mm (f27.5). Seeing was very good (4/5) and transparency okay (3/5). Center time of imaging was 9:50pm MST (uncorrected for offsets). Seeing seemed to degrade substantially as the evening wore on so I did not attempt imaging again later as I originally planned. | 2010-Jan-12 |

### 2010 Feb 13 (Feb 14 UT): IC405 Wide

Last Updated 8/05/2011

|  |
| --- |
| C:\Astronomy\Data\2010\02\13\IC405_Wide\Adobe\IC405Wide_RGB_sum60min_Adobe.jpg |
| IC405Wide\_RGB\_sum60min\_Adobe.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1** | **Size2** | **Mag** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Feb 13 | IC405 | Flaming Star Neb. | GN | 50.0 | 50.0 | 10.0 | 18.5 | 17.7 | Aur |  |  | 0 | 1 | Imaging: Took wide angle 60min RGB image series (30:15:15) with ST2000 and 135mm lens (f/2.5). Tccd=-20C. Image included IC410, IC417, and NGC1907. | 2010-Feb-16 |
| 2010 Feb 14 | IC405 | Flaming Star Neb. | GN | 50.0 | 50.0 | 10.0 | 18.5 | 17.7 | Aur |  |  | 0 | 1 | Imaging: Took 30min RGB image series (20:5:5) with ST2000 and 135mm lens (f/2.5). Tccd=-20C. Image included IC410, IC417, and NGC1907. | 2010-Feb-16 |

**Future work:**

1. Figure out which images are really the final processed Adobe images and if some are misnamed since the exposure time was actually ninety minutes, not sixty. **Aha! There are two observing dates logged in the same directory under /data….**

### 2010 Feb 14 (Feb 15 UT): Cone Nebula Wide

|  |
| --- |
| C:\Astronomy\Data\2010\02\14\ConeWide2\Adobe\ConeWideMosaic_RGB_sum185min_Halos.jpg |
| ConeWideMosaic\_RGB\_sum185min\_Halos.jpg |

**Future work:**

1. Maybe do a little color correction (increase blue relative to green) and then have a large-scale print made.
2. Do an overlay in CDC with most/all of the objects identified.

## March

### 2010 Mar 01 (Mar 02 UT): Mars, Zet Cnc

Mars

Zet Cnc

### 2010 Mar 12 (Mar 13 UT): M44, M81-M82, NGC2360

Last Updated 1/27/2014

|  |  |
| --- | --- |
| C:\Astronomy\Data\2010\03\12\Adobe\M81M82Wide_RGB_sum20min_Adobe-HalfSize.jpg | C:\Astronomy\Data\2010\03\12\Adobe\M44_RGB_sum20min-Adobe-HalfSize.jpg |
| M81M82Wide\_RGB\_sum20min\_Adobe-HalfSize.jpg | M44\_RGB\_sum20min-Adobe-HalfSize.jpg |
| C:\Astronomy\IMAGES\2010\03\12\NGC2360-WIDE_RED_Mosaic-LogLog-HalfSize.jpg | |
| NGC2360-WIDE\_RED\_Mosaic-LogLog-HalfSize.jpg | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1** | **Size2** | **Mag** | **mag/am2** | **MA\*** | **Const.** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Mar 12 | 2360 |  | OC |  |  |  |  |  | CMa | 0 | 1 | Imaging: Took 10min R image series (2x5min) with ST2000 and 135mm lens (f/2.5). L binned 1x1. Originally mistook for M46 or M47 in wide-field shot. NGC2360 and sh2-301 | 2012-Dec-24 |
| 2010 Mar 12 | 2632 | M44 | OC | 95 | 95 | 3.1 | 13.0 | 13.0 | Cnc | 0 | 1 | Imaging. Took 20min RGB series (10:5:5) with ST2000 and 135mm lens (f/2.5). | 2014-Jan-26 |
| 2010 Mar 12 | 3031 | M81 | GX | 24.9 | 11.5 | 6.9 | 13.0 | 13.2 | Uma | 0 | 1 | Imaging: Took wide angle RGB series (10:5:5) with ST2000 and 135mm lens (f/2.5). View included M82. | 2014-Jan-26 |
| 2010 Mar 12 | 3034 | M82 | GX | 10.5 | 5.1 | 8.4 | 12.7 | 12.5 | Uma | 0 | 1 | Imaging: Took wide angle RGB series (10:5:5) with ST2000 and 135mm lens (f/2.5). View included M81. | 2014-Jan-26 |

**Data Disposition:** Data archived on 2TB drive and browse images on astronomy laptop in /images directory.

### 2010 Mar 15 (Mar 16 UT): Mars, Zet Cnc, Eps Hya, 12 Lyn, Gum 1

Last Updated 9/15/2011

|  |  |  |
| --- | --- | --- |
| C:\Astronomy\Data\2010\03\15\Gum1\Adobe\GUM1_RGB_sum60min_AdobeCurves1_FlatBack-halfsize.jpg |  |  |
| Zeta Cancer | Eps Hydra |
|  |  |
| Need file name here | 12 Lynx | Mars |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1** | **Size2** | **Mag** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Mar 15 |  | Zet Can STF1196 AB-C | DS | 5 | 6 | 5.99 | 3.17 | 0.96 | Cnc |  |  | 0 | 1 | Imaging: Took 4 minutes of video (2x2min in one orientation) with ToUcam at 30fps and C8 at 5500mm (f/27.5). Seeing was predicted to be excellent, and I would rate it 4/5. Capella was scintillating with a gentle, but fairly brisk pulse. Interesting how differently scintillation reflects seeing on a dark night versus a full-moon night. Transparency was 5/5. | 2010-Mar-16 |
| 2010 Mar 15 |  | STF 1273 AB-C 11 Eps Hydra | DS | 3.49 | 6.66 | 2.7 | 1.11 | 0.75 | Hyd |  |  | 0 | 1 | Imaging: Took 4 minutes of video (2x2min in one orientation) with ToUcam at 30fps and C8 at 5500mm (f/27.5). Seeing was predicted to be excellent, and I would rate it 4/5. Capella was scintillating with a gentle, but fairly brisk pulse. Interesting how differently scintillation reflects seeing on a dark night versus a full-moon night. Transparency was 5/5. | 2010-Mar-16 |
| 2010 Mar 15 |  | 12 Lynx STF948AB | DS | 5.4 | 6.0 | 1.7 | 1.51 | 0.82 | Lyn |  |  | 0 | 1 | Imaging: Took 4 minutes of video (2x2min in one orientation) with ToUcam at 30fps and C8 at 5500mm (f/27.5). Seeing was predicted to be excellent, and I would rate it 4/5. Capella was scintillating with a gentle, but fairly brisk pulse. Interesting how differently scintillation reflects seeing on a dark night versus a full-moon night. Transparency was 5/5. | 2010-Mar-16 |
| 2010 Mar 15 |  | Gum 1, Seagull | GN |  |  |  |  |  | Mon |  |  | 0 | 1 | Imaging: Took 60 min RGB image series (30:15:15) with ST2000 and 135mm lens (f/2.5). Binned 1x1. Tccd=-20C (no fan). Transparency 5/5. Seeing 4/5. | 2010-Mar-16 |

**Data Disposition:** Gum 1 browse images are in the /images directory on the laptop. Source data are zipped, but not yet on 2TB archive drive. Other data are processed, but not archived.

## April

### 2010 Apr 24 (Apr 25 UT): Gam Leo, Iot Leo, Plato, Copernicus, Saturn, Mars

Last Updated 10/18/2011

|  |  |  |
| --- | --- | --- |
| C:\Astronomy\IMAGES\2010\04\24\Mars_20100424MDT_120sec_Stack0thru5_Drizzle_Wavelets_HalfSize.jpg | C:\Astronomy\IMAGES\2010\04\24\Saturn_20100424MDT_120sec_S4R3__Stack0thru7_WaveletsHueSatLight.jpg |  |
| Mars\_20100424MDT\_120sec\_Stack0thru5\_Drizzle\_Wavelets\_HalfSize.jpg | Saturn\_20100424MDT\_120sec\_S4R3\_\_Stack0thru7\_WaveletsHueSatLight.jpg | Gam Leo – where are final images??? |
|  | Plato_Mosaic_Merged_Sharpened_Adjusted_Annotated | Copernicus_Mosaic_Filtered2_Adjusted_Annotated |
| Iot Leo – where are final images | Need to re-insert jpg image file | Need to re-insert jpg image file |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Ill. Frac.** | **CM** | **LS** | **Size1** | **Mag, Height** | **mag/as2** | **Mars** | **Phobos** | **Deimos** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Apr-25 03:20 | 0.10 | 32.4 | 82 | 7.6 | 0.6 | 5.0 | X |  |  | 61.0 | 3/5 | 0 | 1 | Imaging: Took 12 minutes of video (6x2min) with ToUcam 840 and ST2000 at 5500mm (f27.5). Seeing was very good (3/5) along with transparency (4/5). | 2010-May-27 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Size** | **Mag.** | **mag/as2** | **Mimas** | **Enceladus** | **Tethys** | **Dione** | **Rhea** | **Titan** | **Iapetus** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Apr-25 05:54 | 19.1 | 0.8 | 7.2 |  |  |  |  |  |  |  | 50.0 |  | 0 | 1 | Imaging: Took 16 minutes of video (8x2min) with ToUcam 840 and ST2000 at 5500mm (f27.5). Seeing was very good (3/5) along with transparency (4/5). | 2010-May-27 |

Need to figure out gam and iota leo measurement strategies and whether images were combined for measurement or for that matter combined at all!

04/24/2010 09:38 PM 66,496,512 GamLeoDark\_20100424MDT\_5sec\_S1R1\_\_0000.avi

04/24/2010 09:38 PM 68,803,072 GamLeoDark\_20100424MDT\_5sec\_S1R1\_\_0001.avi

04/24/2010 09:39 PM 66,496,512 GamLeoDark\_20100424MDT\_5sec\_S1R1\_\_0002.avi

04/24/2010 09:34 PM 1,656,212,992 GamLeo\_20100424MDT\_120sec\_S1R1\_\_0000.avi

04/24/2010 09:37 PM 1,638,683,648 GamLeo\_20100424MDT\_120sec\_S1R1\_\_0001.avi

04/24/2010 10:23 PM 136,618,496 IotLeoDark\_20100424MDT\_10sec\_S2R2\_\_0000.avi

04/24/2010 10:16 PM 67,880,448 IotLeoDrift\_20100424MDT\_5sec\_S2R1\_\_0000.avi

04/24/2010 10:22 PM 68,803,072 IotLeoDrift\_20100424MDT\_5sec\_S2R2\_\_0000.avi

04/24/2010 10:15 PM 1,620,231,680 IotLeo\_20100424MDT\_120sec\_S2R1\_\_0000.avi

04/24/2010 10:20 PM 1,653,906,432 IotLeo\_20100424MDT\_120sec\_S2R2\_\_0000.avi

04/24/2010 11:22 PM 134,311,936 PlatoCark\_20100424MDT\_10sec\_S3R2\_\_0000.avi

04/24/2010 11:23 PM 138,463,744 PlatoFlat\_20100424MDT\_10sec\_S3R2\_\_0000.avi

04/24/2010 11:05 PM 1,632,686,592 Plato\_20100424MDT\_120sec\_S3R2\_\_0006.avi

04/24/2010 11:07 PM 1,603,163,136 Plato\_20100424MDT\_120sec\_S3R2\_\_0007.avi

04/24/2010 11:10 PM 1,616,079,872 Plato\_20100424MDT\_120sec\_S3R2\_\_0008.avi

04/24/2010 11:13 PM 1,610,544,128 Plato\_20100424MDT\_120sec\_S3R2\_\_0009.avi

04/24/2010 11:18 PM 1,642,835,456 Plato\_20100424MDT\_120sec\_S3R2\_\_0010.avi

04/24/2010 11:20 PM 1,651,138,560 Plato\_20100424MDT\_120sec\_S3R2\_\_0011.avi

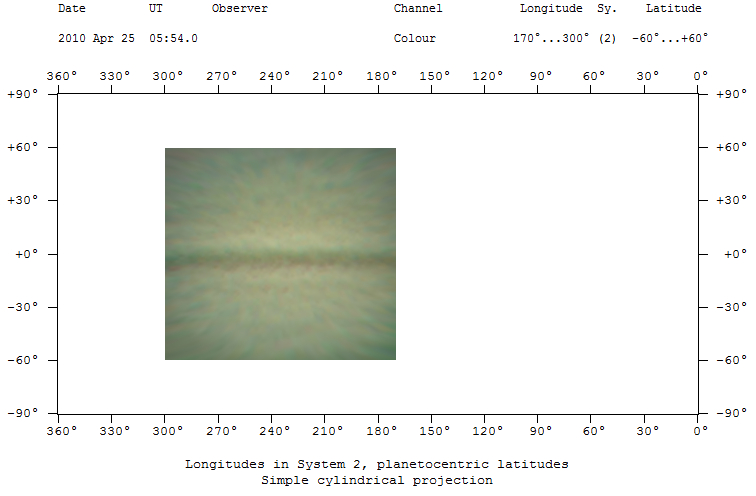
### Analysis: Mars

Last Updated 7/5/2011

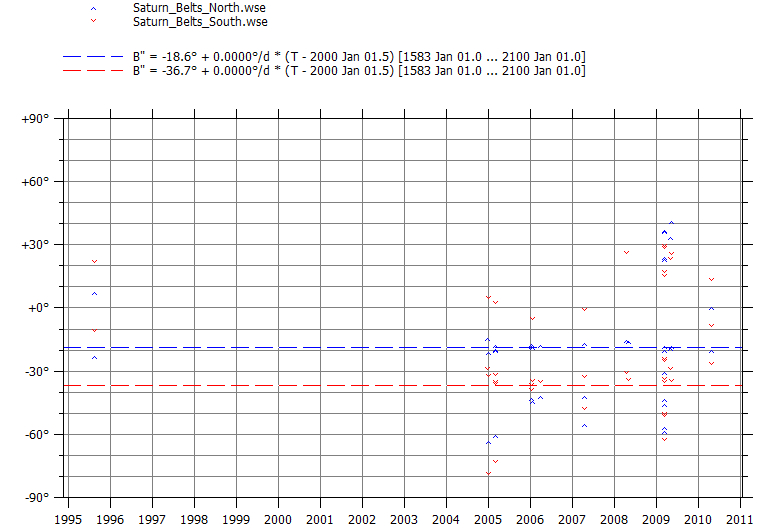
TBD

### Analysis: Saturn

Last Updated 10/18/2011



2010-04-25-0554.0-Hill-Saturn.jpg



Saturn\_Belts.jpg

Blue and red lines indicate average locations of north and south edges of belt.

**Future Work:**

* Should put a workflow in here and also try to apply the vertical box, longitudinal integration analysis applied to the 2011 Saturn apparition.
* Should add a table of numerical values for the latitudes and identifications of belts and zones.

## July

### 2010 Jul 26 (Jul 27 UT): 70 Oph, Eta CrB, Mu Dra, Zet Her

70 Oph

Eta CrB

Mu Dra

Zet Her

## August

### 2010 Aug 20 (Aug 20 UT): Venus (UV)

Last Updated 1/28/2020

On 1/28/2020 I updated the image processing. Instead of using Registax wavelet processing, I used MaximDL unsharp masking. This provided a variable high-pass filter, but without the artifact of sometimes saturating the bright limb. The processed data were then read into WinJUPOS and individual images output with north upwards. Note that I followed the original step of rotating the image 180 degrees and flipping it vertically before sharpening processing. West should be to the right of north, but the rationale for the vertical flip is not clear.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Ill Frac.** | **Size 1** | **Size 2** | **Mag.** | **mag/as2** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Aug-20 23:39 | 0.482 | 24.6 | 11.9 | -4.3 | 1.9 | 37.0 | 4/5 | 0 | 1 | Imaging: Took seriesof Red and UV (Astrodon) images with ST2000 and C8 at 5500mm. Total images: 589. Seeing was 4/5. Transparency 2/5 (wandering cumulus). Tccd=5C (fan ON). Obs start at 5:14pm MDT Obs end at 6:04pm MDT. Don't forget to take out vertical flip from Registax. | 2010-Aug-29 |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 2010-08-20-2339\_0-R(G)B-650-Synth-380.png | 2010-08-20-2339\_0-Hill-Venus-650RED-Derot.png | Venus-5500mm-NUV-Red-Cropped-Rotated.jpg | 2010-08-20-2339\_0-Hill-Venus-NUVoverRed-Derot.png |

|  |
| --- |
| Venus_5500mm_RUV_Final_Filtered |
| 2010 Aug 20  23:39UT |

### 2010 Aug 24 (Aug 24-25 UT): Venus (UV), M57

Last Updated 1/28/2020

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Ill Frac.** | **Size 1** | **Size 2** | **Mag.** | **mag/as2** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Aug-24 22:53 | 0.46 | 25.8 | 11.9 | -4.4 | 1.8 | 39.0 | 3/5 | 0 | 1 | Imaging: Took series of Red and UV (Astrodon) images with ST2000 and C8 at 5500mm. Total frames: 763. Seeing 3/5. Tccd=0C (fan OFF). Transparency 3/5. Red images were set to 10 ms exposure and UV were set to 300ms. Obs start 4:23pm MDT Obs end 5:22pm MDT. | 2010-Aug-29 |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 2010-08-24-2253\_0-Hill-650-Synth-380-R(G)B.png | 2010-08-24-2253\_0-Hill-Venus-650RED\_DarkStack100-Unsharp-Derot.png | 2010-08-24-2253\_0-Hill-Venus-380NUV\_DarkStack282-Unsharp-Derot.png | 2010-08-24-2253\_0-Hill-Venus-380NUV\_over\_650RED-Derot.png |

M57

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| N | 2010 Aug 24 | 6720 | M57 | PN | 1.4 | 1.0 | 9.4 | 9.8 | 9.3 | Lyr | 18h53m36.00s | +33°02'00.0" | 0 | 1 | Imaging: Took 700x3sec clear images with ST2000 and C8 at 5500mm (f/27.5). Binned 2x2. Seeing was 3.5/5. Transparency 4/5. Tccd=-5C (no fan). Dark autosubtracted. No flat was made. Approximately 10 min (600 sec) to get 100 images (5 min), i.e., 50% duty cycle. | 2010-Aug-25 |

### 2010 Aug 25 (Aug 25-26 UT): Venus (UV), M57

Last Updated 1/29/2020

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Ill Frac.** | **Size 1** | **Size 2** | **Mag.** | **mag/as2** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Aug-25 23:22 | 0.454 | 26.2 | 11.9 | -4.4 | 1.8 | 35.0 | 3/5 | 0 | 1 | Imaging: Took series of Red and UV (Astrodon) images with ST2000 and C8 at 5500mm. Total frames: 1140. Seeing 3/5. Tccd=0C (fan OFF). Transparency 3/5. Red images were set to 10 ms exposure and UV were set to 300ms. Obs start 4:37pm MDT Obs end 6:06pm MDT | 2010-Aug-29 |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 2010-08-25-2322\_0-Hill-650-Synth-380-R(G)B.png | 2010-08-25-2322\_0-Hill-Venus-650RED\_Unsharp-Derot.png | 2010-08-25-2322\_0-Hill-Venus-380NUV\_Unsharp-Derot.png | 2010-08-25-2322\_0-Hill-Venus-380NUVover650RED-Derot.png |

08-25T22:37:42.000 – start of NUV exposure? Need to look at a file list to confirm.

25/08/10T23:31:01 – time-obs for RED exposure? Need to look at a file list to confirm.

M57

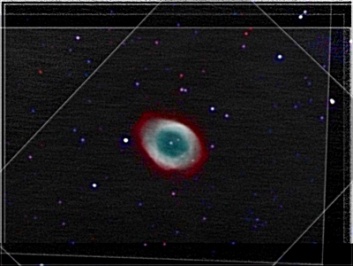
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| N | 2010 Aug 25 | 6720 | M57 | PN | 1.4 | 1.0 | 9.4 | 9.8 | 9.3 | Lyr | 18h53m36.00s | +33°02'00.0" | 0 | 1 | Imaging: Took 997x3sec clear images with ST2000 and C8 at 5500mm (f/27.5). Binned 2x2. Dark autosubtracted. No flat was made. | 2011-Jan-10 |

### 2010 Aug 26 (Aug 27 UT): Venus, M57

**Venus – Don’t know where these images went!!! – 1/27/2020**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Ill Frac.** | **Size 1** | **Size 2** | **Mag.** | **mag/as2** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Aug-26 23:37 | 0.449 | 26.5 | 11.9 | -4.4 | 1.8 | 34.0 | 3/5 | 0 | 1 | Imaging: Took series of 100 Red and 282 UV (Astrodon) images with ST2000 and C8 at 5500mm. Seeing 3/5. Tccd=0C (fan OFF). Transparency 3/5. Red images were set to 10 ms exposure and UV were set to 300ms. | 2010-Aug-29 |

M57



|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| N | 2010 Aug 26 | 6720 | M57 | PN | 1.4 | 1.0 | 9.4 | 9.8 | 9.3 | Lyr | 18h53m36.00s | +33°02'00.0" | 0 | 1 | Imaging: Took 1000x3sec clear images with ST2000 and C8 at 5500mm (f/27.5). Binned 2x2. Took separate darks for averaging an later subtraction. No flat was made. | 2011-Jan-10 |

## September

### 2010 Sep 1 (Sep 2 UT): M8 – Lagoon Nebula

Last Updated 5/29/2011

|  |
| --- |
| C:\Astronomy\Data\2010\09\01\M8\Adobe\M8_20100901_RGB_sum20min_Adobe1_Filtere_HalfSized.jpg |
| M8\_20100901\_RGB\_sum20min\_Adobe1\_Filtere\_HalfSized.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| N | 2010 Sep 01 | 6523 | M8, Lagoon | GN | 45 | 30 | 5 | 12.8 | 13 | Sgr | 18h03m42.00s | -24°23'00.0" | 0 | 1 | Imaging: Took 20min RGB series (10:5:5) with ST2000 at 1260mm (f/6.3). Binning 1x1. Tccd=-10C. Seeing 2/5. Transparency 4/5. | 2010-Sep-15 |

### 2010 Sep 11 (Sep 12 UT): IC1295

Last Updated 5/29/2011

|  |
| --- |
| C:\Astronomy\Data\2010\09\11\IC1295\Adobe\IC1295_LRGB_Master0Filtered_HalfSize.jpg |
| IC1295\_LRGB\_Master0Filtered\_HalfSize.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| N | 2010 Sep 11 | IC1295 |  | PN | 1.5 | 1.5 | 12.7 | 13.6 | 13.4 | Sct | 18h54m36.00s | -08°50'00.0" | 0 | 1 | Imaging: Took 114min LRGB series (54:30:15:15) with ST2000 and C8 at 1260mm (f/6.3). Binning 1x1. Tccd=-15C. No fan. Seeing 3/5. Transparency 4/5. | 2010-Sep-15 |

### 2010 Sep 19 (Sep 19-20 UT): Sun, Moon, Jupiter and its Moons

Last Updated 5/29/2011

|  |
| --- |
| C:\Astronomy\IMAGES\2010\09\19\Sun_Settings1_2000mm_120sec_0000thru0004_FlatStack300_WaveletsSun_Extreme_Wavelets_Colorized.jpg |
| Sun\_Settings1\_2000mm\_120sec\_0000thru0004\_FlatStack300\_WaveletsSun\_Extreme\_Wavelets\_Colorized.jpg |

|  |  |
| --- | --- |
| C:\Astronomy\IMAGES\2010\09\19\Gassendi_Mosaic1_FilteredGamma_HalfSize.jpg | C:\Astronomy\IMAGES\2010\09\19\Domes1_25_Settings3_5500mm_120sec_0000_DarkFlatStack600_WaveletsMoon.jpg |
| Gassendi\_Mosaic1\_FilteredGamma\_HalfSize.jpg | Domes1\_25\_Settings3\_5500mm\_120sec\_0000\_DarkFlatStack600\_WaveletsMoon.jpg |

Sun Observing Details

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Body Name** | **Body Type** | **Feature Name(s)** | **Feature Type(s)** | **Size1** | **Size2** | **Mag, Height** | **mag/as2** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Sep-19 21:11 | Sun | Star | AR 11108 | Sunspots, faculae |  |  |  |  |  |  | 0 | 1 | Imaging: Took five two min videos with ToUcam 840 and C8 at 2000mm (f/10). Seeing was 3/5, transparency 4/5. Images were of active region 11108. | 2010-Sep-20 |

09/19/2010 03:02 PM 129,698,816 SunFla\_Settings1\_2000mm\_120sec\_0000.avi

09/19/2010 02:58 PM 1,591,630,848 Sun\_Settings1\_2000mm\_120sec\_0000.avi

09/19/2010 03:06 PM 1,609,621,504 Sun\_Settings1\_2000mm\_120sec\_0001.avi

09/19/2010 03:11 PM 1,607,314,944 Sun\_Settings1\_2000mm\_120sec\_0002.avi

09/19/2010 03:15 PM 1,605,469,696 Sun\_Settings1\_2000mm\_120sec\_0003.avi

09/19/2010 03:17 PM 1,550,574,592 Sun\_Settings1\_2000mm\_120sec\_0004.avi

**Jupiter**

|  |  |
| --- | --- |
| F:\Astronomy\Projects\Planets\Jupiter\Imaging Data\20100920UT\2010-09-20-0444_0-Hill-Jupiter-Derotated.png | F:\Astronomy\Projects\Planets\Jupiter\Imaging Data\20100920UT\2010-09-20-0603_0-Hill-Jupiter-Derotated.png |
| 9/20/2010  04:44UT  2010-09-20-0444\_0-Hill-Jupiter-Derotated.png | 9/20/2010  06:03UT  2010-09-20-0603\_0-Hill-Jupiter-Derotated.png |

09/19/2010 11:42 PM 138,463,744 Dark4Flat\_5500mm\_10sec\_0000.avi

09/19/2010 11:37 PM 1,658,058,240 Domes1\_25\_Settings3\_5500mm\_120sec\_0000.avi

09/19/2010 11:44 PM 136,157,184 DomesDark\_1\_25\_5500mm\_10sec\_0000.avi

09/19/2010 11:42 PM 138,463,744 Flat\_5500mm\_10sec\_0000.avi

09/19/2010 11:01 PM 138,463,744 GanymedeDark\_Settings2\_5500mm\_10sec\_0000.avi

09/19/2010 10:53 PM 1,660,826,112 Ganymede\_Settings2\_5500mm\_120sec\_0000.avi

09/19/2010 10:55 PM 1,658,980,864 Ganymede\_Settings2\_5500mm\_120sec\_0001.avi

09/19/2010 10:58 PM 1,658,980,864 Ganymede\_Settings2\_5500mm\_120sec\_0002.avi

09/19/2010 11:43 PM 138,463,744 GassendiDark\_1\_100\_5500mm\_10sec\_0000.avi

09/19/2010 11:09 PM 1,658,980,864 Gassendi\_Settings3\_5500mm\_120sec\_0000.avi

09/19/2010 11:12 PM 1,660,364,800 Gassendi\_Settings3\_5500mm\_120sec\_0001.avi

09/19/2010 11:16 PM 1,658,058,240 Gassendi\_Settings3\_5500mm\_120sec\_0002.avi

09/19/2010 11:18 PM 1,657,596,928 Gassendi\_Settings3\_5500mm\_120sec\_0003.avi

09/19/2010 11:23 PM 1,657,135,616 Gassendi\_Settings3\_5500mm\_120sec\_0004.avi

09/20/2010 12:07 AM 138,925,056 JupiterDark\_5500mm\_Settings5\_10sec\_0000.avi

09/19/2010 10:47 PM 134,773,248 JupiterDark\_Settings1\_5500mm\_10sec\_0000.avi

09/20/2010 12:01 AM 1,657,596,928 Jupiter\_5500mm\_Settings5\_120sec\_0000.avi

09/20/2010 12:03 AM 1,660,826,112 Jupiter\_5500mm\_Settings5\_120sec\_0001.avi

09/20/2010 12:06 AM 1,661,748,736 Jupiter\_5500mm\_Settings5\_120sec\_0002.avi

09/19/2010 10:41 PM 1,660,826,112 Jupiter\_Settings1\_5500mm\_120sec\_0000.avi

09/19/2010 10:44 PM 1,661,287,424 Jupiter\_Settings1\_5500mm\_120sec\_0001.avi

09/19/2010 10:46 PM 1,661,748,736 Jupiter\_Settings1\_5500mm\_120sec\_0002.avi

Ganymede and Io

### 2010 Sep 26 (Sep 26-27 UT): Sun, Jupiter and its Moons and Uranus

Sun

Jupiter

Ganymede and Europa

Uranus

### 2010 Sep 26 (Sep 26 UT): Sun

Sun

### 2010 Sep 28 (Sep 29 UT): Jupiter and its Moons and Uranus

Uranus

|  |
| --- |
| URAN_LVAS |
| 2010 Sep 29  05:16UT |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Size** | **Mag.** | **mag/as2** | **Miranda** | **Ariel** | **Umbriel** | **Titania** | **Oberon** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Sep-29 05:16 | 3.7 | 5.7 | 8.5 |  |  |  |  |  | 45.0 | 3/5 | 0 | 1 | Imaging. Took 10 two-minute videos of Uranus using the C8 at 5500mm (f/27.5) and the ToUcam 840. Seeing was quite good (3/5) and transparency was 4/5. | 2010-Sep-27 |

Jupiter

Ganymede and Io

### 2010 Sep 30 (Oct 01 UT): Cat’s Eye Nebula

Last Updated 9/14/2011

|  |  |
| --- | --- |
| C:\Astronomy\IMAGES\2010\09\30\NGC6543_CLEAR_3SEC_DarkStack800_12000Log48000_Filtered2.jpg | C:\Astronomy\IMAGES\2010\09\30\NGC6543_LRGB_Composite_RreFitlered_Ann.jpg |
| NGC6543\_CLEAR\_3SEC\_DarkStack800\_12000Log48000\_Filtered2.jpg | NGC6543\_LRGB\_Composite\_RreFitlered\_Ann.jpg |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| 2010 Sep 30 | 6543 | Cat's Eye | PN | 0.4 | 0.3 | 8.3 | 6.0 | 5.00 | Dra |  |  | 0 | 1 | Imaging: 800x3sec clear filter lucky images with ST2000 and C8 at 5500mm. Binned 2x2. Tccd=-15C - no fan. | 2010-Oct-04 |

**Data Disposition:** Browse imagery has been placed in the //images directory on the laptop. Source data has been zipped, but not yet placed on the 2TB archive drive.

## October

### 2010 Oct 14 (Oct 15 UT): Jupiter, Lunar Craters and Rilles

|  |  |  |  |
| --- | --- | --- | --- |
| JUP1_LVAS | JUP2_LVAS | AlfraganusPosedonus_50msNotBrt_5500mm_120sec_Settings1__0002_DarkFlatStack600_WaveletsMoon1_LVGamp32Contp8 | Atlas_50msNotBrt_5500mm_120sec_Settings1__0000_DarkFlatStack600_WaveletsMoon1_LVGamp16Contp8 |
| Jupiter | Jupiter | Alfraganus | Atlas and Hercules |
| Posedonus_50msNotBrt_5500mm_120sec_Settings1__0000_0001_0003_DarkFlatStack600_WaveletsMoon1_Wavelets_Wavelets | MoonSerenity_5500mm_Mosaic_WaveletsGamma | MoonHyginus_5500mm_Mosaic2_WaveletsGamma_Cropped | |
| Poseidonus | Serenity | Triesnecker, Hyginus, Ariadaeus | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **Target Time** | **Date (UT)** | **Size** | **Mag.** | **mag/as2** | **CM I** | **CM II** | **CM III** | **Jupiter** | **Io** | **Europa** | **Ganymede** | **Callisto** | **Himalia** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| Y |  | 2010-Oct-15 05:09 | 48.7 | -2.9 | 5.5 | 25.6 | 181.9 | 34.1 | X | X |  |  |  |  | 47.0 |  | 0 | 1 | Imaging: Took 2x2min videos of Jupiter with C8 at 5500mm (f/27.5) and ToUcam. | 2010-Dec-16 |
| Y |  | 2010-Oct-15 06:21 | 48.7 | -2.9 | 5.5 | 69.5 | 225.5 | 77.6 | X |  |  |  |  |  | 44.0 |  | 0 | 1 | Imaging: Took 3x2min videos of Jupiter with C8 at 5500mm (f/27.5) and ToUcam. | 2010-Dec-16 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **Date (UT)** | **Feature Name(s)** | **Type(s)** | **Subtype(s)** | **Feat. Size1 (km)** | **Feat. Size2 (km)** | **Height (km)** | **Lunation** | **Ill. %** | **Lat.** | **Long.** | **Sub Obs Lat** | **Sub Obs Long** | **Delt. Sig.** | **Vis. Indx.** | **Sun Alt.** | **Sun Az.** | **Moon Size** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| N | 2010-Oct-15 03:09 | Alfraganus | Crater |  | 22.0 | 22.0 | 3.830 |  |  |  |  |  |  |  |  |  |  |  |  | 3/5 | 0 | 1 | Imaging: Took one 2 min videos with C8 at 5500mm (f/27.5) and ToUcam. Original video named Poseidonus…0002. | 2010-Oct-21 |
| N | 2010-Oct-15 02:58 | Atlas | Crater | FFC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3/5 | 0 | 1 | Imaging: Took 2 min video with C8 at 5500mm (f/27.5) and ToUcam of Atlas and Hercules. | 2010-Oct-21 |
| N | 2010-Oct-15 02:58 | Hercules | Crater |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3/5 | 0 | 1 | Imaging: Took 2 min video with C8 at 5500mm (f/27.5) and ToUcam of Atlas and Hercules. | 2010-Oct-21 |
| N | 2010-Oct-15 03:13 | Posidonius | Crater | FFC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3/5 | 0 | 2 | Imaging: Took two 2 min videos with C8 at 5500mm (f/27.5) and ToUcam at 03:01 and 03:03. Later took one 2min video (refocused) at 03:37. Combined in to single final image. | 2011-Jan-03 |
| N | 2010-Oct-15 02:36 | Rima Ariadaeus | Rille |  | 226.0 | 6.0 | 0.480 |  |  |  |  |  |  |  |  |  |  |  |  | 3/5 | 0 | 1 | Imaging: Took series of six 2min. videos of Ariadaeus, Hyginus, and Trisnecker Rilles with C8 at 5500mm (f/27.5) and ToUcam. First two were centered on Ariadaeus, second two on Hyginus, and last three on Trisnecker. | 2010-Oct-24 |
| N | 2010-Oct-15 02:36 | Rima Hyginus | Rille |  | 226.0 | 3.0 |  |  |  |  |  |  |  |  |  |  |  |  |  | 3/5 | 0 | 1 | Imaging: Took series of six 2min. videos of Ariadaeus, Hyginus, and Trisnecker Rilles with C8 at 5500mm (f/27.5) and ToUcam. First two were centered on Ariadaeus, second two on Hyginus, and last three on Trisnecker. | 2010-Oct-24 |
| N | 2010-Oct-15 02:36 | Rimae Triesnecker | Rille |  | 206.0 | 2.0 |  |  |  |  |  |  |  |  |  |  |  |  |  | 3/5 | 0 | 1 | Imaging: Took series of six 2min. videos of Ariadaeus, Hyginus, and Trisnecker Rilles with C8 at 5500mm (f/27.5) and ToUcam. First two were centered on Ariadaeus, second two on Hyginus, and last three on Trisnecker. | 2010-Oct-24 |
| N | 2010-Oct-15 02:57 | Serenity | Rille |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3/5 | 0 | 2 | Imaging: Took two 2 min video of SW Mare Serenity and rilles in the area. Needs to be identified. First video was at 2:37 UT and the second was at 3:17UT after refocusing. | 2011-Jan-08 |

### 2010 Oct 16 (Oct 17 UT): Lunar Craters and Rilles

Archimedes

Cassini

Clavius

Copernicus

Eratosthenes

Fra Mauro

Hadley Rille

Pitatus

Plato

Rima Aridaeus

Rima Hyginus

Rimae Trisnecker

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **Target Time** | **Date (UT)** | **Feature Name(s)** | **Type(s)** | **Subtype(s)** | **Feat. Size1 (km)** | **Feat. Size2 (km)** | **Height (km)** | **Lunation** | **Ill. %** | **Lat.** | **Long.** | **Sub Obs Lat** | **Sub Obs Long** | **Delt. Sig.** | **Vis. Indx.** | **Sun Alt.** | **Sun Az.** | **Moon Size** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| C |  | 2010-Oct-17 04:32 | Archimedes | Crater | Filled | 85.0 | 85.0 | 2.150 |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 | Imaging: Quite good seeing 4/5. | 2010-Nov-14 |
| C |  | 2010-Oct-17 04:35 | Cassini | Crater |  | 60.0 | 60.0 | 1.240 |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 | Imaging: Quite good seeing 4/5. | 2010-Nov-16 |
| C |  | 2010-Oct-17 05:05 | Clavius | Crater |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 | Imaging: Took 2 min video with C8 at 5500mm (f/27.5). | 2010-Nov-24 |
| C |  | 2010-Oct-17 04:27 | Copernicus | Crater |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 |  | 2010-Nov-25 |
| C |  | 2010-Oct-17 04:29 | Eratosthenes | Crater |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 |  | 2010-Nov-26 |
| C |  | 2010-Oct-17 04:59 | Fra Mauro | Crater |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 |  | 2010-Nov-26 |
| C |  | 2010-Oct-17 04:42 | Hadley Rille | Rille | Apollo | 82.0 | 3.0 | 0.400 |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 | Imaging: Took two 2-min videos with C8 at 5500mm (f/27.5) and ToUcam. | 2010-Dec-01 |
| C |  | 2010-Oct-17 04:52 | Pitatus | Crater | FFC | 100.0 | 100.0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | 1 | Imaging: Took 2 min video with C8 at 5500mm (f/27.5) and ToUcam. | 2010-Dec-07 |
| C |  | 2010-Oct-17 04:08 | Plato | Crater | Filled |  |  |  |  |  |  |  | 6.7 | 1.6 | 49.8 | 0.86 |  |  | 32.2 |  | 3.5 | 0 | 1 | Imaging: Six 2 min videos around Plato. 5500mm (f/27.5); ToUcam 840. Seeing 4/5. Trans. 4/5 Includes Alpine Valley. | 2010-Nov-24 |
| C |  | 2010-Oct-17 04:21 | Rima Ariadaeus | Rille |  | 226.0 | 6.0 | 0.480 |  |  |  |  |  |  |  |  |  |  |  |  | 4/5 | 0 | 1 | Imaging: Took series of TBD videos of Hyginus rille at high sun angle with C8 at 5500mm (f/27.5) and ToUcam. Had some issues with dark frames. | 2010-Oct-21 |
| C |  | 2010-Oct-17 04:21 | Rima Hyginus | Rille |  | 226.0 | 3.0 |  |  |  |  |  |  |  |  |  |  |  |  |  | 4/5 | 0 | 1 | Imaging: Took series of TBD videos of Hyginus rille at high sun angle with C8 at 5500mm (f/27.5) and ToUcam. Had some issues with dark frames. | 2010-Oct-21 |
| C |  | 2010-Oct-17 04:21 | Rimae Triesnecker | Rille |  | 206.0 | 2.0 |  |  |  |  |  |  |  |  |  |  |  |  |  | 4/5 | 0 | 1 | Imaging: Took series of TBD videos of Hyginus rille at high sun angle with C8 at 5500mm (f/27.5) and ToUcam. Had some issues with dark frames. | 2010-Oct-21 |

## December

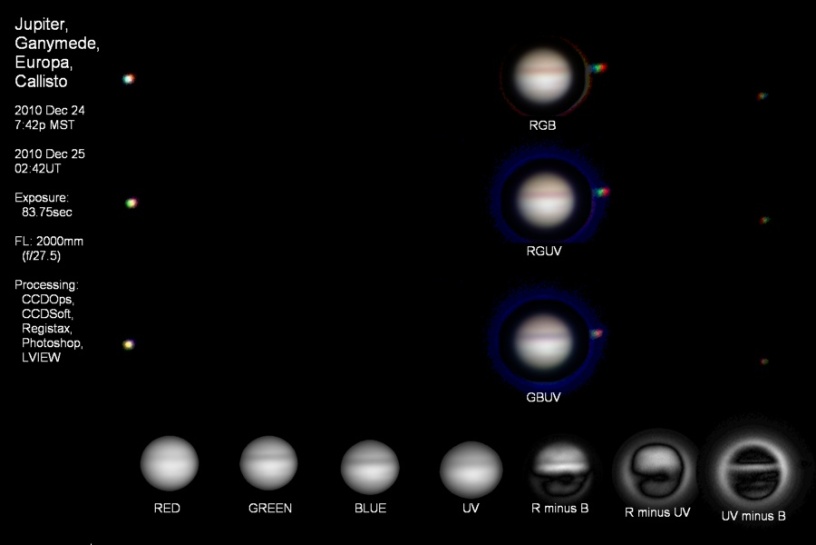
### 2010 Dec 24 (Dec 25 UT): Uranus’s Moons and Jupiter in UV

**Uranus** - Took series of clear images of Uranus with ST2000 and C8 at 2000mm (f/10) in an attempt to record all the Uranian moons.

|  |  |
| --- | --- |
| URNA_LVAS | URNB_LVAS |
| 2010 Dec 25  01:57UT | 2010 Dec 25  02:13UT |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date (UT)** | **Size** | **Mag.** | **mag/as2** | **Miranda** | **Ariel** | **Umbriel** | **Titania** | **Oberon** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| 2010-Dec-25 02:03 | 3.5 | 5.8 | 8.5 |  | X |  | X | X | 44.0 | 3/5 | 0 | 2 | Imaging: Took two series of 100x3sec clear images with ST2000 and C8 at 2000mm (f/10). Intent was to capture all five Uranian moons. Refocused after first series. Tccd=-10C. Seeing 3/5. Transparency 4/5. First image time was centered on 6:57pMST (01:57UT) and the second was centered on 7:13pMST (02:13UT). | 2010-Dec-28 |

**Jupiter** - Took series of R, G, B, and UV images of Jupiter with ST2000 and C8 at 2000mm (f/10) in attempt to record UV atmospheric features and create cool color composites. Rotated images by -25deg and enlarged by 250% in final image array file in Photoshop.



|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Status** | **Target Time** | **Date (UT)** | **Size** | **Mag.** | **mag/as2** | **CM I** | **CM II** | **CM III** | **Jupiter** | **Io** | **Europa** | **Ganymede** | **Callisto** | **Himalia** | **Elevation** | **Seeing** | **Visual** | **Photo** | **Comments** | **Update** |
| N |  | 2010-Dec-25 02:42 | 39.2 | -2.4 | 5.6 | 341.4 | 316.9 | 187.9 | X |  | X | X | X |  | 42.0 | 3/5 | 0 | 1 | Imaging: Took RGBUV series of images (25:75:50:75) with C8 at 2000mm (f/10) and ST2000. Intent was to investigate UV properties of the atmosphere and look for polar hazes. Also, wanted to create three- and four-color composites. Seeing was good 3/5. Transparency okay at 3/5. | 2010-Dec-26 |

### Analysis: Jupiter Meteorology

Last Updated 7/5/2011

TBD

### Analysis: Jupiter Multispectral

Last Updated 7/5/2011

TBD

### Analysis: Jovian Moons

Last Updated 7/5/2011

TBD

### 2010-Dec-25 (Dec-26 UT): M31 Mosaic Panel #6

**M31 (Mosaic Panel)** - Took 120 min series of images of M31 with ST2000 and C8 at 1260mm (f/6.3). This would be panel number six of my big M31 mosaic.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Status** | **Target Time** | **Date** | **NGC** | **Other ID** | **Type** | **Size1/Mag1** | **Size2/Mag2** | **Mag/Sep** | **mag/am2** | **MA\*** | **Const.** | **RA** | **Dec** | **Obs** | **Photo** | **Comments** | **Update** |
| N |  | 2010 Dec 25 | 224 | M31 | GX | 178.0 | 63.0 | 3.4 | 13.5 | 13.5 | And |  |  | 0 | 1 | Imaging: Took 120min LRGB image series (60:30:15:15) with ST2000 and C8 at 1260mm (f/6.3). Image was centered about **southeast** of the galaxy. Binning 1x1. Fabulous seeing 4/5. Transparency 4/5. Tccd=-20C, no fan. | 2010 Dec 25 |

### 2010-Dec-28 (Dec-29 UT): M31 Mosaic Panel #7

**M31 (Mosaic Panel)** - Took 120 min series of images of M31 with ST2000 and C8 at 1260mm (f/6.3). This would be panel number seven of my big M31 mosaic. This panel included the brilliant star cluster NGC206. However, seeing was quite bad (2/5) and transparency went through some bad periods also. Overall, transparency was probably 2/5.