



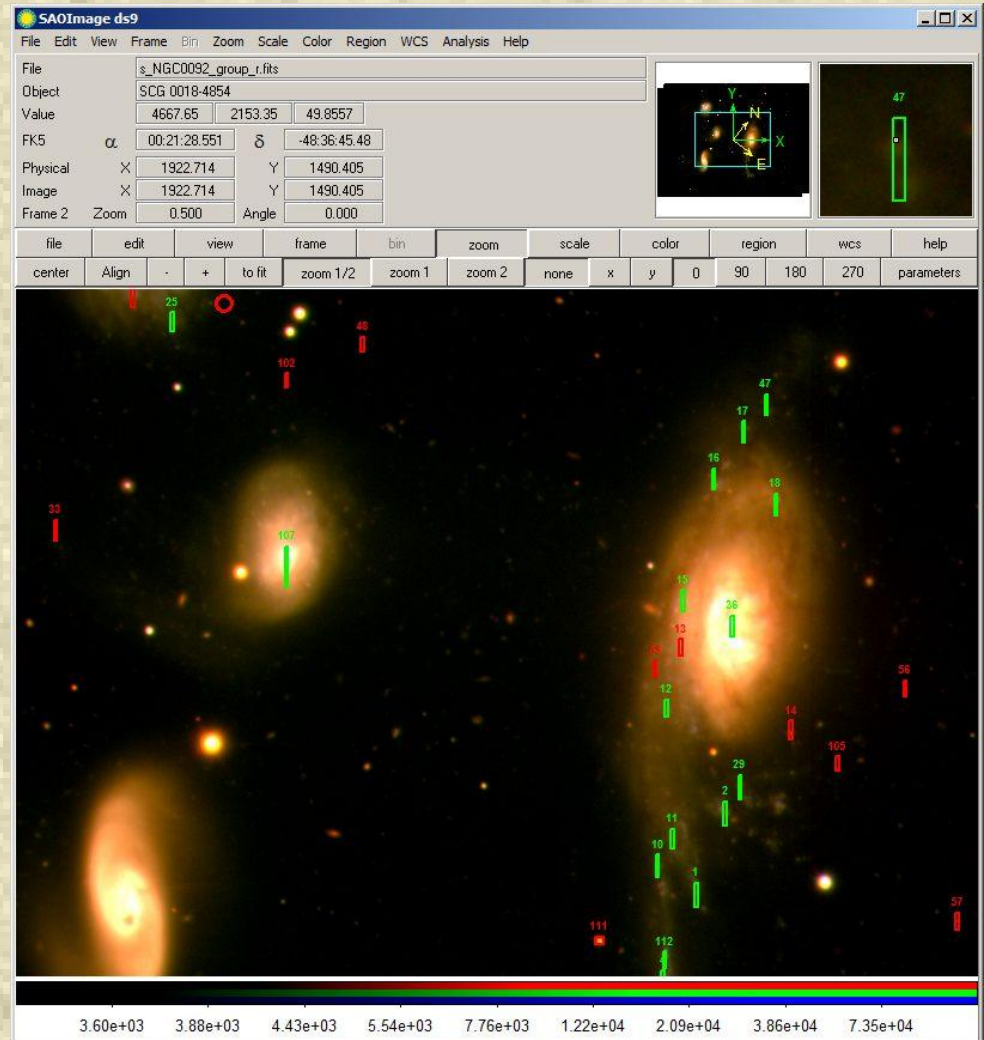
Ferramentas para Solicitação e
Verificação de Observações:
DS9 e SKYCALC

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10/000010

O DS9

Aplicativo desenvolvido pela SÃO par visualização 2D e 3D de arquivos FITS em seus mais diferentes “sabores”. Poderoso por permitir:

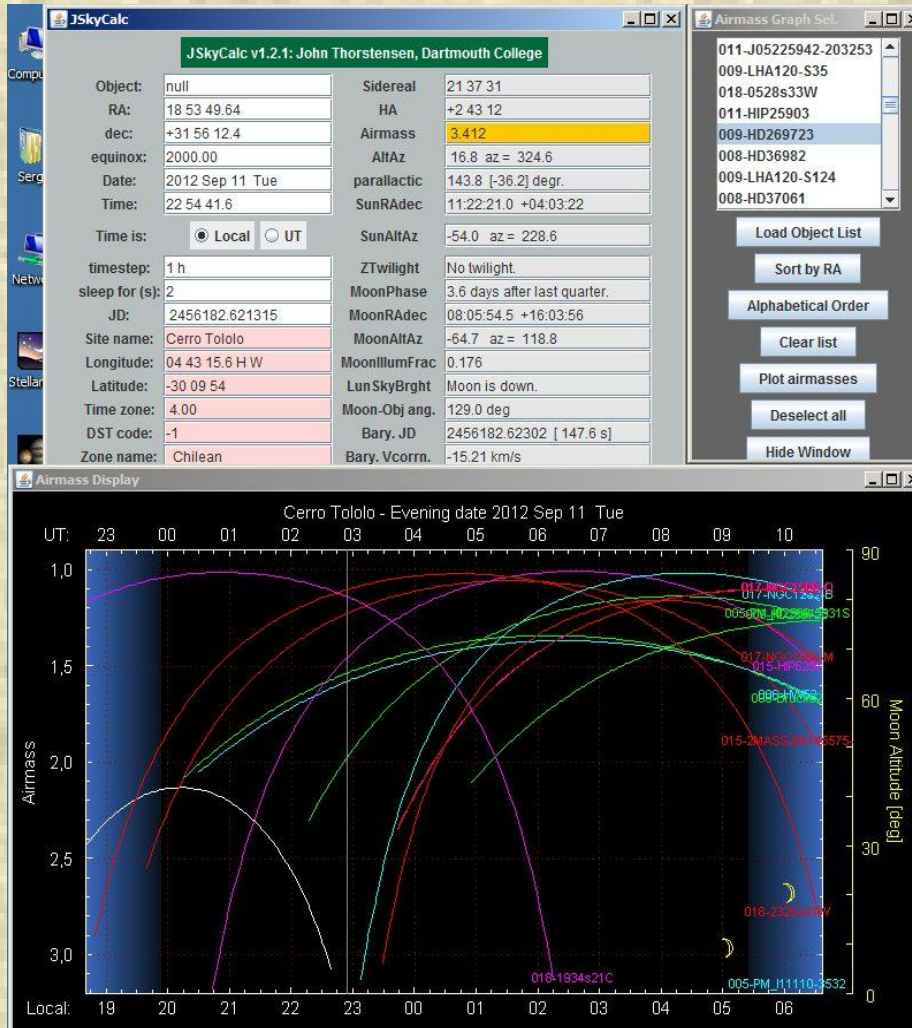
- Comunicação direta com ferramentas externas de análise;
- O uso de regiões para medir, marcar, delimitar, comparar, extrair dados, etc;
- Utilizar ferramentas básicas de análise, como sobreposição de contornos, suavização, geração de tabela de píxeis;
- Acesso a banco de imagens, “Archives” e catálogos compatível com o protocolos VO;
- Sobrepor diversas imagens em frames, canais, mosaicos e manipulá-los em termos de escala de intensidades, cores, zoom, orientação, sistema de coordenadas;
- Muito mais....



<http://hea-www.harvard.edu/PD/ds9/site/Home.html>

O SKYCALC

Ferramenta desenvolvida por John Thorstensen para geração de efemérides. Muito útil por permitir:



• Visualização da distribuição da massa de ar de um objeto ao longo da noite;

• Gerar relatório de “observabilidade”, com informações como coordenadas em diferentes sistemas, contribuição da luz de crepúsculo e da fração de iluminação da lua no background do objeto, distância objeto-lua, ângulo paralático, etc...

• Trabalhar com lista de objetos;

• Produzir possíveis cenários de observação;

• Visualizar objetos em um mapa do céu (ainda muito “tosco”);

• Personalização de observatório.



**Preparativos para um
Pedido de Observação**

Verificando a “Observabilidade”

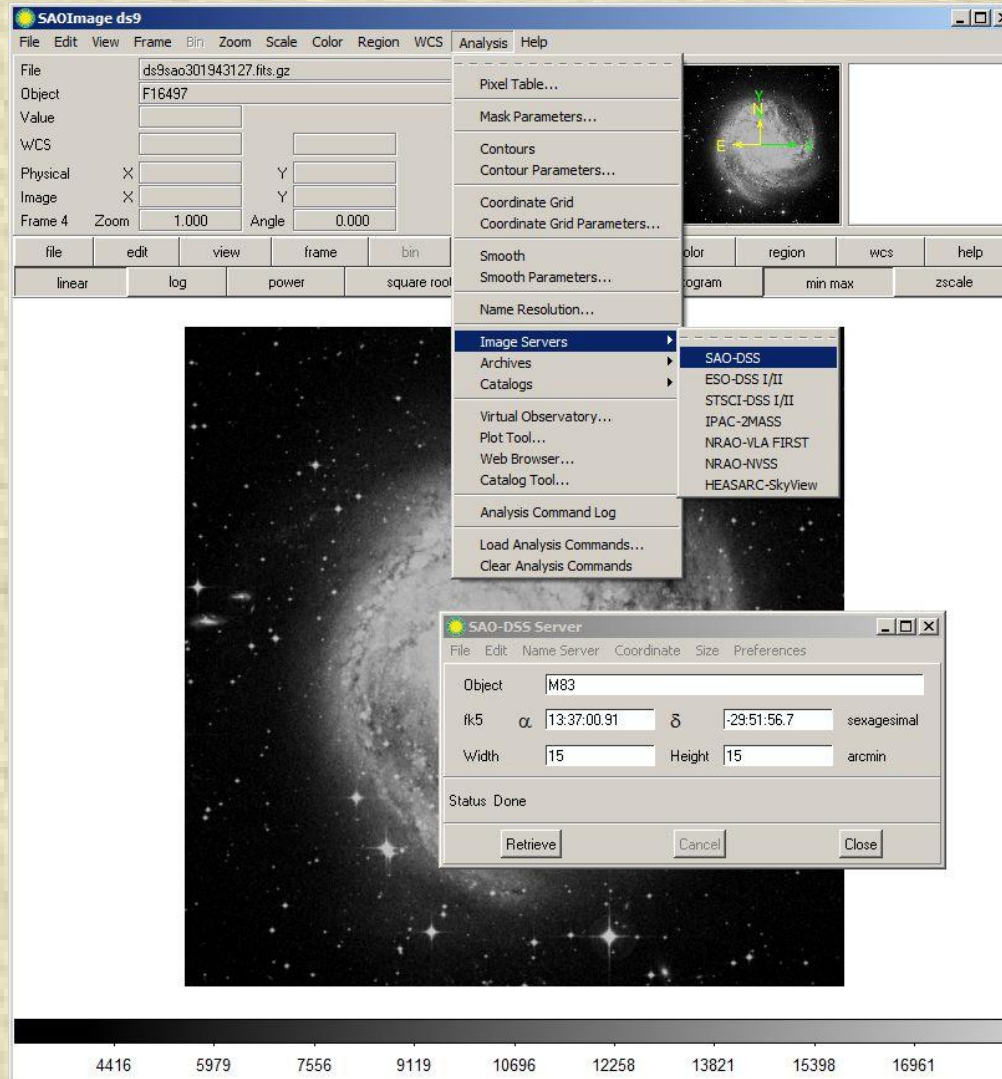
Por “observabilidade” compreendemos o conjunto de condições necessárias para que uma observação possa ser feita eficientemente.

The image displays a collection of astronomical software windows. The primary window is JSkyCalc v1.2.1, which provides a comprehensive set of parameters for the Gemini South, Pachon site. Below the parameters are several control buttons for refreshing data, setting the current time, and navigating through different views like hourly circumstances and seasonal observability. In the background, a Mozilla Thunderbird email window is visible, containing a message from the Gemini observatory regarding proposals for the 2013 semester. To the right, the Airmass Graph Sel window shows a list of observatory options, with Gemini South, Pachon selected. The Airmass Display window at the bottom right features a dual-axis graph showing airmass (left axis, 1.0 to 3.0) and moon altitude (right axis, 0 to 90 degrees) over a 24-hour period. The graph shows airmass increasing from approximately 1.0 at 23:00 UT to 3.0 at 01:00 UT, while moon altitude remains near 0 degrees.

| Parameter | Value |
|-----------------|---|
| Object: | null |
| RA: | 13 37 00.91 |
| dec: | -29 51 55.8 |
| equinox: | 2000.00 |
| Date: | 2013 Jun 31 Mon |
| Time: | 15 28 25.1 |
| Time is: | <input checked="" type="radio"/> Local <input type="radio"/> UT |
| timestep: | 1 h |
| sleep for (s): | 2 |
| JD: | 2456475.311402 |
| Site name: | Gemini South, Pachon |
| Longitude: | 04 42 53.6 H W |
| Latitude: | -30 13 42 |
| Time zone: | 4.00 |
| DST code: | -1 |
| Zone name: | Chilean |
| Elevation: | 2725 m |
| Terrain elev: | 2725 m |
| Sidereal | 09 25 34 |
| HA | -4 12 13 |
| Airmass | 1.690 |
| AltAz | 36.2 az = 106.8 |
| parallactic | -107.4 [72.6] degr. |
| SunRAdec | 06:43:59.9 +23:03:14 |
| SunAltAz | 24.1 az = 319.2 |
| ZTwilight | (Daytime.) |
| MoonPhase | 1.6 days after last quarter. |
| MoonRAdec | 01:42:09.1 +12:48:53 |
| MoonAltAz | -28.6 az = 268.5 |
| MoonIllumFrac | 0.344 |
| LunSkyBrgh | Moon is down. |
| Moon-Obj ang. | 162.9 deg |
| Bary. JD | 2456475.31365 [193.9 s] |
| Bary. Vcorn. | -25.15 km/s |
| Constellation | Hya |
| Planet Warning? | --- |

Carregando Uma Imagem de um “Servidor de Imagens”

Necessidades: Acesso a rede; nome do objeto ou suas coordenadas.



Acesso aos “Archives”

Conhecimentos envolvidos: Utilização do navegador interno.

The screenshot displays the SAOImage ds9 software interface. The main window shows a large astronomical image of a galaxy. A menu is open, highlighting the 'Archives' option. Below the menu, a table lists various astronomical data files. The table has columns for file size, type, action, icon, name, dimensions, and other details. The 'NED (NASA/IPAC)' option is highlighted in the menu.

| | | | | | | |
|--|---|-----|-----------------|-------------|------|---|
| 22069KB FITS image Retrieve | Display FITS Header | | Ha , 6568A | 16.8 x 16.8 | 1.56 | (|
| 22069KB FITS image Retrieve | Display FITS Header | | Ha-R , 6568A | 16.8 x 16.8 | 1.56 | (|
| 123KB JPG image Retrieve | N/A | N/A | Ha-R , 6568A | 16.8 x 16.8 | 1.56 | (|
| 22069KB FITS image Retrieve | Display FITS Header | | R , 6507A | 16.8 x 16.8 | 1.57 | (|

Back to NED Home

4416 5979 7556 9119 10696

Manipulando múltiplos "Frames"

Conhecimentos envolvidos: Abrir e deletar frames, manipular escala de intensidades e cores, controlar alinhamento de imagens.

The screenshot displays the SAOImage ds9 software interface, which is used for astronomical image processing. The main window shows two side-by-side images of a galaxy, with a zoomed-in view of a region on the right. The interface includes a menu bar (File, Edit, View, Frame, Bin, Zoom, Scale, Color, Region, WCS, Analysis, Help) and a toolbar with various icons for file operations, editing, and viewing. A panel on the left contains metadata for the current frame, including the file name 'ds9sao301943127.fits.gz', object name 'F16497', and WCS coordinates. A 'Frame' menu is open, showing options like 'New Frame', 'Delete Frame', 'Clear Frame', 'Reset Frame', 'Refresh Frame', 'Single Frame', 'Tile Frames', 'Blink Frames', 'Match', 'Lock Crosshair', 'Goto Frame', 'Show/Hide Frames', 'Move Frame', 'First Frame', 'Previous Frame', 'Next Frame', 'Last Frame', 'Data Cube...', and 'Frame Parameters'. A 'Scale Parameters' dialog box is also open, showing a 'Pixel Distribution' histogram with a peak at 0 and a high value of 88.926071. The histogram has a scale from 0 to 79.068. The 'Scale Parameters' dialog has 'Low' set to 0 and 'High' set to 88.926071. In the background, a Windows Explorer window shows a folder named '2013A' containing several files, and a Microsoft Excel window is partially visible.

Abrindo Arquivos Armazenados em Disco

Conhecimentos envolvidos: Abrir novos frames, abrir diferentes tipos de arquivos fits, manipulação de frame

The image shows a Gemini Science Archive browser window on the left and the SAOImage ds9 software interface on the right. The browser window displays a table of astronomical data with columns for Mark, Target Name, RA (J2000), DEC (J2000), Data Superset Name, and Original File Name. The SAOImage ds9 window shows a multi-panel view of a galaxy, with a central panel displaying a zoomed-in view of the nucleus. The software interface includes a menu bar (File, Edit, View, Frame, Bin, Zoom, Scale, Color, Region, WCS, Analysis, Help) and a toolbar with various image manipulation tools. The central panel shows a grayscale image of a galaxy with a zoomed-in view of the nucleus, and the bottom panel shows a zoomed-in view of the nucleus with a red crosshair and labels 'N', 'E', 'S', 'W'.

| Mark | Target Name | RA (J2000) | DEC (J2000) | Data Superset Name | Original File Name |
|-------------------------------------|-------------|-------------|-------------|-------------------------------|--------------------|
| <input type="checkbox"/> | Nucleus | 13 37 00.95 | -29 51 55.4 | GS-2007A-DD-17-28-001-mrg | MRGS20070807S0046 |
| <input type="checkbox"/> | Nucleus | 13 37 00.95 | -29 51 55.4 | GS-2007A-DD-17-28-011 | S20070807S0056 |
| <input type="checkbox"/> | Nucleus | 13 37 00.95 | -29 51 55.4 | GS-2007A-DD-17-28-011-mrg | MRGS20070807S0056 |
| <input type="checkbox"/> | Nucleus | 13 37 00.95 | -29 51 55.4 | GS-2007A-DD-17-28-006 | S20070807S0051 |
| <input type="checkbox"/> | Nucleus | 13 37 00.95 | -29 51 55.4 | GS-2007A-DD-17-28-001 | S20070807S0046 |
| <input checked="" type="checkbox"/> | Nucleus | 13 37 00.95 | -29 51 55.4 | GS-2007A-DD-17-28-001-mrg-add | MRGS20070807S0046 |
| <input type="checkbox"/> | Nucleus | 13 37 00.95 | -29 51 55.4 | GS-2007A-DD-17-28-006-mrg | MRGS20070807S0051 |

Acessando Catálogos

Conhecimentos envolvidos: Ferramenta para acessar catálogos, manipulação da ferramenta de catálogos; sobreposição de objetos na imagem, gerar e manipular regiões.

The screenshot displays the SAOImage ds9 software interface. The main window shows a galaxy image with several green circles overlaid, indicating regions of interest. The interface includes a menu bar (File, Edit, View, Frame, Bin, Zoom, Scale, Color, Region, WCS, Analysis, Help) and a toolbar with various icons. The main window title is "SAOImage ds9" and the file being opened is "NGC5236_Ha.fits.gz".

The "Search for Catalogs" window is open, showing a search for "M83". The search results are displayed in a table with columns for Resource, Description, Wavelength, Mission, and Astronomy. The results include:

| Resource | Description | Wavelength | Mission | Astronomy |
|----------------|---|------------|---------|-------------------|
| J/A+A/410/53 | M83 X-ray sources (Soria+, 2003) | optical | Chandra | Planetary_Nebulae |
| J/A+A/439/265 | Wolf-Rayet population in M83 (Hadfield) | UV | Chandra | Planetary_Nebulae |
| J/A+A/489/533 | M83 volume densities of giant molecular | X-ray | Chandra | Planetary_Nebulae |
| J/AJ/122/3046 | HST photometry of star clusters in NGC | Gamma-ray | Chandra | Planetary_Nebulae |
| J/AJ/133/504 | Galaxies around CenA/M83 galaxy co | | | |
| J/AJ/136/479 | IRAC observations of M83 extended L | | | |
| J/ApJ/591/L111 | Period of Cepheids in M 83 (Bonanos+ | | | |
| J/ApJ/695/580 | Oxygen abundance in M83 (Bresolin+ | | | |
| J/MNRAS/417/L6 | Catalogue of stellar cluster properties i | | | |

The "Catalog Tool" window is also open, showing a table of catalog data with columns for R/R25, XUV, F[OII], e_F[OII], and F[OIII]. The table contains 23 rows of data:

| R/R25 | XUV | F[OII] | e_F[OII] | F[OIII] | | |
|-----------|-----------|--------|----------|---------|-----|-----|
| 1.28 | | 716 | 86 | 593 | | |
| 1.15 | | | | 21 | | |
| 1.16 | | | | 99 | | |
| 1.17 | | 265 | 26 | 248 | | |
| 1.04 | | | | 11 | | |
| 204.19396 | -29.77792 | 10 | 1.03 | 338 | 21 | 121 |
| 204.19479 | -29.74500 | 11 | 1.32 | 509 | 78 | 36 |
| 204.19879 | -29.77447 | 12 | 1.04 | 639 | 109 | 57 |
| 204.20450 | -29.93414 | 13 | 0.76 | 214 | 19 | 108 |
| 204.20862 | -29.93131 | 14 | 0.72 | 113 | 7 | 14 |
| 204.21292 | -29.93697 | 16 | 0.75 | 94 | 6 | 0 |
| 204.22121 | -29.93056 | 17 | 0.67 | 211 | 12 | 44 |
| 204.22600 | -29.78717 | 18 | 0.82 | 206 | 25 | 22 |
| 204.22829 | -29.78533 | 19 | 0.83 | 216 | 22 | 58 |
| 204.23062 | -29.79225 | 21 | 0.76 | 184 | 17 | 42 |
| 204.23183 | -29.79378 | 22 | 0.74 | 185 | 20 | 17 |
| 204.23204 | -29.92956 | 23 | 0.64 | 128 | 7 | 50 |

The "Catalog Tool" window also shows a "Copy to Regions" button and a "Page Setup..." button. The status bar at the bottom indicates "length: 694 lines: 2 ln: 1 Col: 1 Sel: 0".

Trabalhando com Regiões

Conhecimentos envolvidos: Editar parâmetros de regiões geradas com os catálogos e salvar resultado.

The screenshot displays the SAOImage ds9 software interface. The main window shows a galaxy image with several regions marked by colored circles. A 'Save Regions' dialog is open, showing the 'Format' set to 'xy' and the 'Coordinate System' set to 'wcs'. A 'Circle Point' dialog is also open, showing the 'Number' 289 and 'Text' 'Bre+2009_2'. The 'Circle Point' dialog has 'Center' coordinates of 204.25162 and -29.79608, and a 'Size' of 11. The 'Save Regions' dialog has 'OK' and 'Cancel' buttons. The 'Circle Point' dialog has 'Apply' and 'Close' buttons. The background image shows a galaxy with a coordinate system overlay. The 'Save Regions' dialog has a 'Coordinate System' dropdown set to 'wcs' and a 'Format' dropdown set to 'xy'. The 'Circle Point' dialog has a 'Center' field with coordinates 204.25162 and -29.79608, and a 'Size' field with the value 11. The 'Circle Point' dialog also has a 'Text' field with the value 'Bre+2009_2'. The 'Save Regions' dialog has a 'Format' dropdown set to 'xy' and a 'Coordinate System' dropdown set to 'wcs'. The 'Circle Point' dialog has an 'Apply' button and a 'Close' button. The background image shows a galaxy with a coordinate system overlay. The 'Save Regions' dialog has a 'Coordinate System' dropdown set to 'wcs' and a 'Format' dropdown set to 'xy'. The 'Circle Point' dialog has a 'Center' field with coordinates 204.25162 and -29.79608, and a 'Size' field with the value 11. The 'Circle Point' dialog also has a 'Text' field with the value 'Bre+2009_2'. The 'Save Regions' dialog has a 'Format' dropdown set to 'xy' and a 'Coordinate System' dropdown set to 'wcs'. The 'Circle Point' dialog has an 'Apply' button and a 'Close' button.

SAOImage ds9

File Edit View Frame Bin Zoom Scale Color Region WCS Analysis Help

File: NGC5236_Ha.fits.gz

Object: J1337-29

Value: []

WCS: [] [] [] [] [] []

Physical X: [] Y: []

Image X: [] Y: []

Frame 7 Zoom: 0.254 Angle: 0.000

file edit view frame bin zoom scale color region wcs help

new new rgb delete clear single file blink match frames match colorbars first previous next last

Save Regions

Format: xy

Coordinate System: wcs

OK Cancel

Circle Point

File Color Width Property Font Coordinate

Number: 289

Text: Bre+2009_2

Center: 204.25162 -29.79608 fl: 5

Size: 11 Pixels

Apply Close

Color

Black

White

Red

Green

Blue

Cyan

Magenta

Yellow

Other...

WCS

Multiple WCS

Image

Physical

Amplifier

Detector

Equatorial B1950

Equatorial J2000

ICRS

Galactic

Ecliptic

Degrees

Sexagesimal

1 item selected 14.6 MB Computer

Pasta1 - Microsoft Excel

Menu Início Inserir Layout Fórmul Dados Revisã Exibiçã Desem Suplen Acroba

Obter Dados Externos Atualizar tudo Conexões Classificar e Filtrar

Classificar Filtro Ferramentas de Dados Estrutura de Tópicos Análise

A2 13:36:39.99

| | A | B | C | D | E | F | G | H | I |
|-----|------------|-------------|---|----------|---|---|---|---|---|
| 196 | 13:37:15.1 | -29:50:40.1 | n | SNR?;WR? | | | | | |
| 197 | 13:37:16.1 | -29:48:35.1 | n | AGN?;WR? | | | | | |
| 198 | 13:37:16.6 | -29:50:59.1 | n | SNR? | | | | | |
| 199 | 13:37:17.8 | -29:51:55.1 | n | SNR?;WR? | | | | | |
| 200 | 13:37:17.9 | -29:48:04.1 | n | WR | | | | | |
| 201 | 13:37:23.6 | -29:48:53.1 | n | WR | | | | | |
| 202 | | | | | | | | | |
| 203 | | | | | | | | | |
| 204 | | | | | | | | | |

Pronto Contagem: 400 100%

Trabalhando com Regiões – Abrir Lista Personalizada

Conhecimentos envolvidos: Editar parâmetros de regiões geradas com os catálogos e salvar resultado. Selecionar tudo, deletar regiões.

The screenshot displays the SAOImage ds9 software interface. The main window shows a star field with a green dashed circle region. Several stars are labeled with coordinates, such as Bre09_38(+54+300), Bre09_12(-198+328), and Bre09_40(-215+315). A 'Load Regions' dialog box is open, showing options for Format (xy), Coordinate System (wcs), and Load into Current Frame. The 'Region' panel on the right shows a list of regions with their Date modified. The 'WCS' panel shows the current coordinate system settings, including Equatorial B1950, Equatorial J2000, ICRS, Galactic, Ecliptic, Degrees, and Sexagesimal. The 'File' panel on the left shows the current object (NGC5236_Ha) and various viewing options.

Load Regions Dialog:

- Format: xy
- Coordinate System: wcs
- Load into Current Frame (selected)
- Load into All Frames

Region List (Date modified):

| Date modified |
|------------------|
| 13/09/2012 07:38 |
| 13/09/2012 07:38 |
| 13/09/2012 06:38 |
| 13/09/2012 01:06 |
| 12/09/2012 16:23 |
| 12/09/2012 16:14 |
| 12/09/2012 14:49 |
| 17/08/2012 10:51 |
| 06/06/2008 04:03 |

WCS Panel:

- WCS (checked)
- Multiple WCS
- Image
- Physical
- Amplifier
- Detector
- Equatorial B1950
- Equatorial J2000 (checked)
- ICRS
- Galactic
- Ecliptic
- Degrees
- Sexagesimal (checked)

Region Parameters Table:

| Region | RA | Dec |
|--------|-------------|-------------|
| 1 | 13:36:39.99 | -29:51:35.2 |
| 2 | 13:36:40.35 | -29:51:06.7 |
| 3 | 13:36:41.50 | -29:52:16.0 |
| 4 | 13:36:41.58 | -29:49:56.4 |
| 5 | 13:36:42.33 | -29:52:17.3 |
| 6 | 13:36:42.73 | -29:52:34.9 |
| 7 | 13:36:43.70 | -29:50:45.9 |
| 8 | 13:36:43.83 | -29:52:11.3 |
| 9 | 13:36:44.65 | -29:50:34.2 |
| 10 | 13:36:45.31 | -29:53:07.7 |
| 11 | 13:36:45.70 | -29:52:20.9 |
| 12 | 13:36:45.93 | -29:53:34.4 |
| 13 | 13:36:46.42 | -29:53:42.3 |
| 14 | 13:36:46.93 | -29:46:41.9 |
| 15 | 13:36:47.13 | -29:55:31.7 |
| 16 | 13:36:47.18 | -29:53:51.4 |
| 17 | 13:36:47.22 | -29:53:36.9 |

Trabalhando com Regiões – Trabalhando com Grupos

Conhecimentos envolvidos: Criar grupos, selecionar e inverter seleção de grupos.

The screenshot displays the SAOImage ds9 interface. The main window shows a star field with a large green dashed circle region. Numerous stars are labeled with identifiers such as Bre09_12(-198+328), Bre09_38(+54+300), and WS83_17(+225+66). The interface includes a menu bar (File, Edit, View, Frame, Bin, Zoom, Scale, Color, Region, WCS, Analysis, Help), a toolbar on the left with buttons for file, edit, view, frame, bin, zoom, scale, color, region, wcs, help, new, new rgb, delete, clear, single, tile, blink, match frames, match colorbars, first, previous, next, last, and a physical coordinate system. On the right, there are two panels: 'Region' and 'Groups'. The 'Region' panel shows options for Get Information..., Shape, Composite Region, Instrument FOV, Template, Color, Width, Properties, Font, Centroid, Move to Front, Move to Back, Select All, Select None, Invert Selection, Delete Selected Regions, Delete All Regions, New Group, Groups..., List Regions..., Load Regions..., Save Regions..., and Region Parameters. The 'Groups' panel shows a list of groups: BK02, Bre02, Bre09, Corotation, DTJ80, WS83, and a table of coordinates. The table has columns for group name, RA, Dec, and a third column with values.

| Group | RA | Dec | Value |
|------------|-------------|-------------|----------|
| BK02 | | | :51:35.2 |
| Bre02 | | | :51:06.7 |
| Bre09 | | | :52:16.0 |
| Corotation | | | :49:56.4 |
| DTJ80 | | | :52:17.3 |
| WS83 | | | :52:34.9 |
| | | | :50:45.9 |
| | | | :52:11.3 |
| | | | :50:34.2 |
| | | | :53:07.7 |
| | | | :52:20.9 |
| | | | :53:34.4 |
| | | | :53:42.3 |
| | | | :46:41.9 |
| 15 | 13:36:47.13 | -29:55:31.7 | |
| 16 | 13:36:47.18 | -29:53:51.4 | |
| 17 | 13:36:47.22 | -29:53:36.9 | |

Exemplo de Finding Chart

Conhecimentos envolvidos: Criar regiões, girar, medir ângulos com a régua, copiar e colar regiões, inverter escala de cores, exportar imagem.

The screenshot displays the SAOImage ds9 software interface. The main window shows a grayscale astronomical image with a blue rectangular region and a red circle around a point labeled "PN d0 Oscar". A scale bar at the bottom right indicates "1 arcmin". The interface includes a menu bar (File, Edit, View, Frame, Bin, Zoom, Scale, Color, Region, WCS, Analysis, Help), a menu, a toolbar, and several panels: Region, Shape, Region Parameters, and a coordinate table.

Region Parameters:

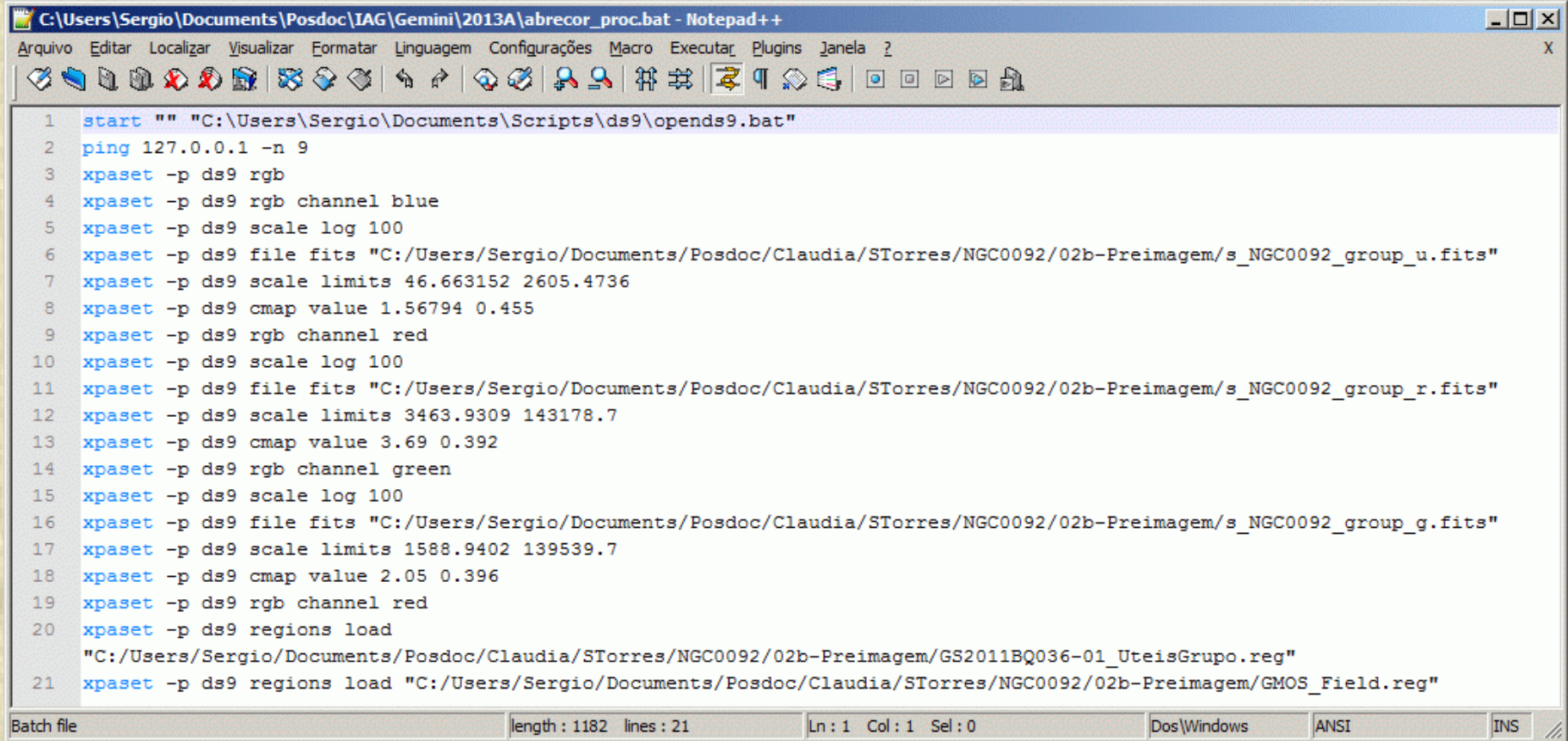
| Color | Width | Property | Font | Coordinate | Size |
|--------|-----------|------------|---------|------------|------|
| number | 615 | | | | |
| center | 204.25609 | -29.849664 | fk5 | | |
| radius | 3 | 185.79 | arcsec | | |
| angle | 11 | | Degrees | | |

Coordinate Table:

| Number | RA (h:m:s) | Dec (d:m:s) |
|--------|-------------|-------------|
| 9 | 13:36:44.65 | -29:50:34.2 |
| 10 | 13:36:45.31 | -29:53:07.7 |
| 11 | 13:36:45.70 | -29:52:20.9 |
| 12 | 13:36:45.93 | -29:53:34.4 |
| 13 | 13:36:46.42 | -29:53:42.3 |
| 14 | 13:36:46.93 | -29:46:41.9 |
| 15 | 13:36:47.13 | -29:55:31.7 |
| 16 | 13:36:47.18 | -29:53:51.4 |
| 17 | 13:36:47.22 | -29:53:36.9 |

Uso de Comandos XPA

O XPA é uma linguagem de comunicação que permite conectar os mais diferentes aplicativos com o DS9.



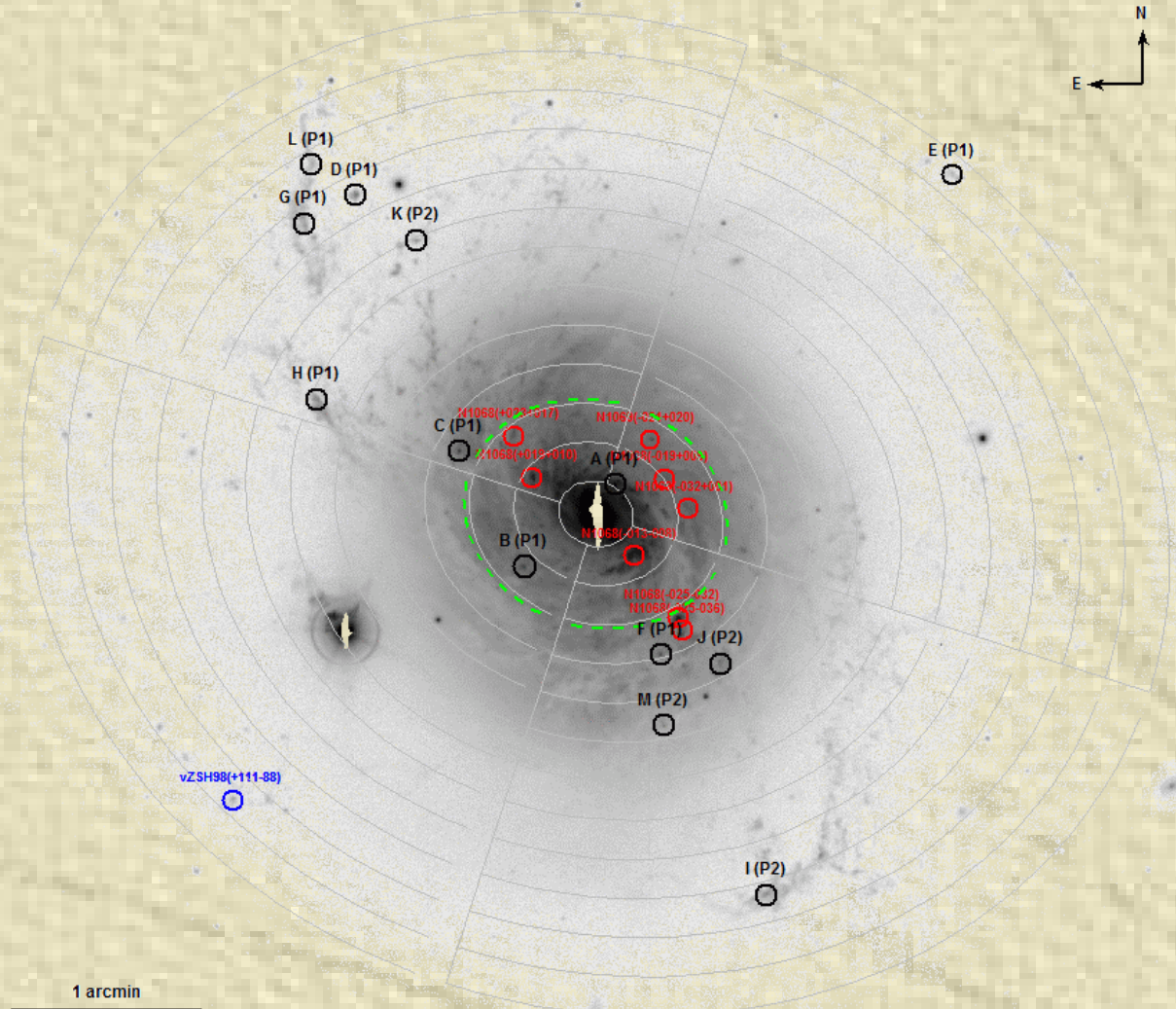
```
C:\Users\Sergio\Documents\Posdoc\IAG\Gemini\2013A\abrecor_proc.bat - Notepad++
Arquivo Editar Localizar Visualizar Formatar Linguagem Configurações Macro Executar Plugins Janela ?
1 start "" "C:\Users\Sergio\Documents\Scripts\ds9\opens9.bat"
2 ping 127.0.0.1 -n 9
3 xpaset -p ds9 rgb
4 xpaset -p ds9 rgb channel blue
5 xpaset -p ds9 scale log 100
6 xpaset -p ds9 file fits "C:/Users/Sergio/Documents/Posdoc/Claudia/STorres/NGC0092/02b-Preimagem/s_NGC0092_group_u.fits"
7 xpaset -p ds9 scale limits 46.663152 2605.4736
8 xpaset -p ds9 cmap value 1.56794 0.455
9 xpaset -p ds9 rgb channel red
10 xpaset -p ds9 scale log 100
11 xpaset -p ds9 file fits "C:/Users/Sergio/Documents/Posdoc/Claudia/STorres/NGC0092/02b-Preimagem/s_NGC0092_group_r.fits"
12 xpaset -p ds9 scale limits 3463.9309 143178.7
13 xpaset -p ds9 cmap value 3.69 0.392
14 xpaset -p ds9 rgb channel green
15 xpaset -p ds9 scale log 100
16 xpaset -p ds9 file fits "C:/Users/Sergio/Documents/Posdoc/Claudia/STorres/NGC0092/02b-Preimagem/s_NGC0092_group_g.fits"
17 xpaset -p ds9 scale limits 1588.9402 139539.7
18 xpaset -p ds9 cmap value 2.05 0.396
19 xpaset -p ds9 rgb channel red
20 xpaset -p ds9 regions load
"C:/Users/Sergio/Documents/Posdoc/Claudia/STorres/NGC0092/02b-Preimagem/GS2011BQ036-01_UteisGrupo.reg"
21 xpaset -p ds9 regions load "C:/Users/Sergio/Documents/Posdoc/Claudia/STorres/NGC0092/02b-Preimagem/GMOS_Field.reg"
Batch file length : 1182 lines : 21 Ln : 1 Col : 1 Sel : 0 Dos\Windows ANSI INS
```

Verificação dos Dados



Observação de Regiões HII no SOAR

Exemplo de observação da galáxia NGC1068 para o meu projeto SO2012B-017.



Verificando o Header

Conhecimentos envolvidos: Abrir e localizar informações no header.

The screenshot displays the SAOImage ds9 interface. The main window shows the FITS header for the file '0126.S02012B-017_0910.fits'. The header text is as follows:

```
FILE = T / FITS Standard
BITPIX = 16 / FITS Bits/Pixel (-16 signifies [U16])
NAXIS = 3 / Number of Axes
NAXIS1 = 4142 / Length of Axis 1 (Columns)
NAXIS2 = 1896 / Length of Axis 2 (Rows)
NAXIS3 = 1 / # of Frames
BSCALE = 1 / Scaling Factor (Default=1)
BZERO = 32768 / Offset Factor (Default=0)
DATE-OBS = '2012-09-11T07:45:53.50' / DATE-OBS Format is YYYY-MM-DDThh:mm:ss.ss
DATE = '2012-09-11' / Date Format is YYYY-MM-DD
TIME = '07:45:53.50 to 07:55:53.81' / ~ Start & Stop of Exposure
N_PARAM = 80 / Number of Parameters
PARAM0 = -106.3 / CCD Temperature, °C
PARAM1 = 0 / Not Used
PARAM2 = 0.000 / CCD Chamber Pressure, Torr
PARAM3 = 0 / Not Used
PARAM4 = 0 / Not Used
PARAM5 = 0 / Not Used
PARAM6 = 0 / Not Used
PARAM7 = 0 / Not Used
PARAM8 = 0 / Shutter Status
PARAM9 = 0 / XIRQA Status
PARAM10 = 1 / Cooler Status
PARAM11 = 0 / Not Used
PARAM12 = 0 / Not Used
PARAM13 = 0 / Not Used
PARAM14 = 0 / Not Used
PARAM15 = 0 / Not Used
PARAM16 = 0 / Serial Origin, Pixels
PARAM17 = 4142 / Serial Length, Binned Pixels
PARAM18 = 1 / Serial Binning, Pixels
PARAM19 = 0 / Serial Post Scan, Pixels
PARAM20 = 1100 / Parallel Origin, Pixels
PARAM21 = 1896 / Parallel Length, Binned Pixels
PARAM22 = 1 / Parallel Binning, Pixels
PARAM23 = 0 / Parallel Post Scan, Pixels
PARAM24 = 600000 / Exposure Time, ms
PARAM25 = 0 / Continuous Clear, (Enabled)
PARAM26 = 330 / DSI Sample Time, (100 KHz)
PARAM27 = 3 / Analog Attenuation, (High)
```

A search dialog box is open over the header text, with the search expression 'airmass' entered. The dialog box has an 'OK' button and a 'Cancel' button.

Conferindo Condições Observacionais com SKYCALC

Conhecimentos envolvidos: Exibição de lista de objetos, mudar para UT.

The screenshot displays the JSkyCalc software interface, which is used for astronomical observations. The main window is titled "JSkyCalc v1.2.1: John Thorstensen, Dartmouth College". It features a control panel on the left with various settings for observation, including object name, RA, dec, date, time, and site information. The central area contains two "Object Selector" windows, one for "017-NGC1068-E" and another for "017-NGC1068-H", both showing a list of objects and buttons for "Load Object List", "Sort by RA", "Alphabetical Order", "Clear list", and "Hide Window". To the right, a file explorer window shows a directory structure for "Posdoc\IAG\Gemini\2013A", listing various FITS files and other data. At the bottom, an "Airmass Display" window shows a graph titled "SOAR, Pachon - Evening date 2012 Sep 10 Mon". The graph plots Airmass (left y-axis, 1.0 to 3.0) and Moon Altitude [deg] (right y-axis, 0 to 90) against time (x-axis, UT: 23 to 10 and Local: 19 to 06). A red curve shows the airmass increasing from approximately 1.2 at UT 23:00 to 3.0 at UT 04:00. A yellow crescent moon icon is shown at UT 05:00, and a red dot labeled "017-NGC 1068-L" is marked at UT 06:00.

JSkyCalc v1.2.1: John Thorstensen, Dartmouth College

Object: null
RA: 02 42 46.60
dec: +00 01 02.2
equinox: 2000.00
Date: 2012 Sep 11 Tue
Time: 07 55 53.5
Time is: Local UT
timestep: 1 h
sleep for (s): 2
JD: 2456181.830480
Site name: SOAR, Pachon
Longitude: 04 42 53.6 HW
Latitude: -30 13 42
Time zone: 4.00
DST code: -1
Zone name: Chilean
Elevation: 2725 m
Terrain elev: 2725 m

Sidereal 02 35 58
HA -0 07 28
Airmass 1.158
AltAz 59.6 az = 3.7
parallactic -176.8 [3.2] degr.
SunRAdec 11:19:31.2 +04:21:28
SunAltAz -37.0 az = 109.2
ZTwilight No twilight
MoonPhase 2.8 days after last quarter.
MoonRAdec 07:27:10.3 +18:34:01
MoonAltAz 4.7 az = 65.3
MoonIllumFrac 0.238
LunSkyBright 23.4 V mag/sq arcsec
Moon-Obj ang. 71.9 deg
Bary. JD 2456181.83411 [313.9 s]
Bary. Vcorr. 21.46 km/s
Constellation Cet
Planet Warning? ---

Refresh output Set to Now Step Forward Step Back
Auto Update Auto Step Site Menu Planet Table
Hourly Circumstances Nightly Almanac Seasonal Observability
Object Lists ... Sky Display Alt. Coordinates Airmass Graphs
Quit Help

Object Selector
017-NGC1068-E
017-NGC1068-F
017-NGC1068-G
017-NGC1068-H
017-NGC1068-I
017-NGC1068-J
017-NGC1068-K
017-NGC1068-L
Load Object List
Sort by RA
Alphabetical Order
Clear list Hide Window

Airmass Graph Sel.
017-NGC1068-H
017-NGC1068-I
017-NGC1068-J
017-NGC1068-K
017-NGC1068-L
017-NGC1068-M
017-NGC1232-<XXX>
Load Object List
Sort by RA
Alphabetical Order
Clear list
Plot airmasses
Deselect all
Hide Window

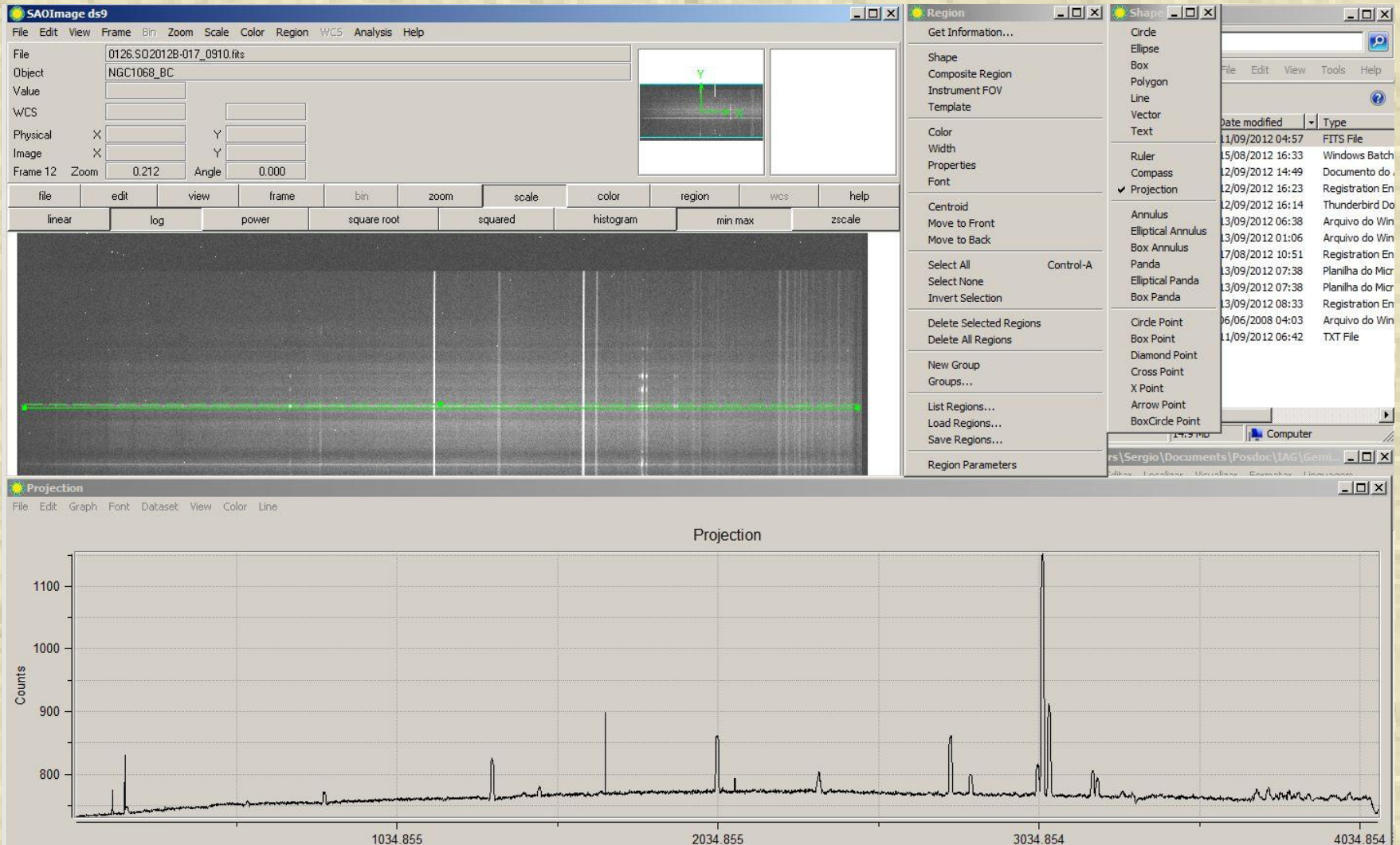
nts\Posdoc\IAG\Gemini\2013A
IAG Gemini 2013A
Calc 2013A
File Edit View Tools Help
Open E-mail Burn
Name Date modified Type
0126.SO2012B-017_0910.fits 11/09/2012 04:57 FITS File
abrecor_proc.bat 15/08/2012 16:33 Windows Batch
Blair+_arXiv1209.0025.pdf 12/09/2012 14:49 Documento do
Blair+_arXiv1209.0025.reg 12/09/2012 16:23 Registration En
Gemini - semestre 2013A.eml 12/09/2012 16:14 Thunderbird Do
HIPASS_11337-29_I_Ha-R_mhf2006.fits.gz 13/09/2012 06:38 Arquivo do Win
mrgS20070807S0046_add.fits.gz 13/09/2012 01:06 Arquivo do Win
NGC5236_Corot_RegHII_b.reg 17/08/2012 10:51 Registration En
NGC5236_ExtraGalacHIIreg.xls 13/09/2012 07:38 Planilha do Micr
NGC5236_ExtraGalacPNreg_Blair+_arXiv... 13/09/2012 07:38 Planilha do Micr
NGC5236_Finding.reg 13/09/2012 08:33 Registration En
NGC5236_Ha.fits.gz 06/06/2008 04:03 Arquivo do Win
SOARLOG_2012-09-10.txt 11/09/2012 06:42 TXT File

Airmass Display
SOAR, Pachon - Evening date 2012 Sep 10 Mon
UT: 23 00 01 02 03 04 05 06 07 08 09 10
Airmass 1.0
1.5
2.0
2.5
3.0
Local: 19 20 21 22 23 00 01 02 03 04 05 06
Moon Altitude [deg] 90
60
30
0
017-NGC 1068-L

0126.SO2012B-017_0910.fits
File Edit
NAXIS2 = 1896 / Length of Axis 2 (Rows)
NAXIS3 = 1 / # of Frames
BSCALE = 1 / Scaling Factor (Default=1)
BZERO = 32768 / Offset Factor (Default=0)
DATE-OBS = '2012-09-11T07:45:53.50' / DATE-OBS Format is YYYY-MM-
DATE = '2012-09-11' / Date Format is YYYY-MM-DD
TIME = '07:45:53.50 to 07:55:53.81' / ~ Start & Stop of Expos
N_PARAM = 80 / Number of Parameters
PARAM0 = -106.3 / CCD Temperature, °C
PARAM1 = 0 / Not Used

Verificando Espectroscopia com o DS9

Conhecimentos envolvidos: Região de projeção, integração do fluxo, exibição e controle de gráfico.



Verificando Imageamento de Mosaico feito com SPARTAN

Conhecimentos envolvidos: Abrir imagens como segmentos de mosaicos, alinhados pelo WCS. Programa SO2012B-016:

