



POLITÉCNICA

Montegancedo Observatory

<http://om.fi.upm.es>



Workshop on Robotic Autonomous Observatories
Torremolinos, Malaga, Spain, 18-21 May 2009

Montegancedo Observatory: The First Free Access Astronomical Observatory Teleoperated Via the Internet

<http://om.fi.upm.es>



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- 2.- Observatory description**
- 3.- Software Architecture**
- 4.- Astronomical events & broadcasting**
- 5.- Free observation**
- 6.- Future works**
- 7.- Conclusions**
- 8.- Acknowledge**



1. Introduction

✓ Who we are?

Ciclope: Project of collaborative e-learning & e-research

- ◆ Remote laboratories
- ◆ Philosophy: Free knowledge
- ◆ Arquitectura FOSS
- ◆ Web 2.0
- ◆ Started in 1996 with TITERE web lab
- ▶ www.ciclope.info/titere



1 Users online

44 Access

Last Access: 2005-10-19 09:23:09

Navigation

- Scenario Pelier
- [-] Pelier Control
- [-] Simulation and Desing
- [-] P1-System Identification
- [-] P2-Identification
- [-] Practice Pulse Generator
- [-] P3-Root Locus
- [-] P4-Control PID
- [-] P5-Discrete Control
- [-] P6-Frequency domain control
- [-] Ziegler-Nichols
- [-] Webcal

Practice 1.1: System identification.

HELP

- Set time value.
- Set step value to cold side temperature you want to get.
- Number of samples is referred to samples used to generate graphics.
- Button "Start" start real time execution
- Button "Stop" stops real time execution
- If you want to see graphics click over image "Graph". A popup with the image is shown and it is refresh each 5 seconds or less.
- If you want to download all data in each execution you should click "Download link". This is a text file with several columns.

Reservation time: Step: 0.0 Time: 60.0 Number Of Samples: 32 Start

GRAPH

Browse mem file: Send Mem

1 Users online

Alberto MOLINA Exit

4 Access

Last Access: 2005-06-28 17:56:14

Navigation

- [-] Scenario Robot
- [-] Hanoi Towers
- [-] Webcal

SPSTERM Ready MAXFD: 2.0.1 Santiago Palomino 2005 <11bserial-nt.sf.net>

Pulsa una opción:
 1=GIRO ANTIHORARIO 2=GIRO HORARIO
 3=FONDO ATRAS 4=FONDO ADLANTE
 5=ALTURA ARRIBA 6=ALTURA ABAJO
 7=PINZA ABRIR 8=PINZA CERRAR
 9=STOP 0=EXIT
 00000000

00:18:47

1. Introduction

✓ What is Montegancedo Observatory?

Remote access Astronomical Observatory teleoperated via the Internet.

✓ Test bed of Ciclope Astro Free software

➤ <http://sourceforge.net/projects/castro/>

Ciclope Astro: Online Astronomical Observatory - Mozilla Firefox

Archivo Editar Ver Historial Marcadores Herramientas Ayuda

peaker - E... escupm02_... infraestruct... acknowledge ... astrophysic... (Sin título) colectores s... Ciclop... x

Ciclope Astro beta Idiomas disponibles: EN | ES

Username: Password: Entrar Registratel

Inicio Noticias Comunidad Telescopio

Bienvenido a Ciclope Astro

Ciclope Astro es una herramienta de Ciclope que proporciona una serie de herramientas para experimentos astronómicos, creación de escenarios de este tipo y control de herramientas tales como, telescopios, cámaras y cúpulas de forma remota.

El principal objetivo es poder controlar hasta el más mínimo detalle de un proyecto astronómico, automatizando todas las tareas y haciéndolas accesibles y controlables a través de Internet.

Esta aplicación nace con la idea de ser un medio para el aprendizaje y compartición de conocimientos astronómicos y, en general, para la divulgación de la Astronomía. El acceso es totalmente libre y gratuito para cualquier internauta.

15:36:32 2008/07/16

Webcam en el Observatorio UPM (actualizada cada 5 segundos)

Sunrise 06:58 21:42





1. Introduction

✓ Montegancedo Observatory Objectives

- ◆ Initiation to Astronomy with professional astronomers supervision
- ◆ OM is a Web 2.0 for e-learning and e-research
- ◆ To form a web community of people who learn Astronomy
- ◆ To generate free access learning material by the community
- ◆ Encourage good work. Community vote every single action each user does. *Pictures, tutorials, comments, etc*
- ◆ User's reputation deliver observation time
 - Karma, page rank importance algorithm
- ◆ Anybody with Internet connection can access to the telescope
- ◆ Tasks to be performed
 - On line work: Observation (Real experimentation)
 - Off line work: Data analysis, voting, content generation
 - Broadcasting astronomical events





© 2007 Europa Technologies
Image © 2007 DigitalGlobe

© 2006 Google™

2. Observatory description

- ✓ Where are we?: Facultad de Informática UPM, Boadilla del Monte – Madrid SPAIN



2. Observatory description



Dome assembly (December 20th, 2006)




Ciclope Astro beta Available Languages: [ELL](#) | [ES](#)

Username: Password: [Sign in](#) [Register!](#)


- Home
- Observatory
- Weather Station
- Downloads
- Screenshots
- Statistics
- License

Financed by:



Weather Station

Temperature:	10.3 C
Wind Chill:	10.3 C
Heat Index:	10.3 C
Dewpoint:	8.5 C
Humidity:	89 %
Barometer:	1012.0 + mb
Wind:	WNW at 8 kph
High Wind:	18 kph at 06:57
Today's Rain:	11.4 mm
Rain Rate:	4.8 mm/hr
High Rain Rate:	17.8 mm/hr at 09:19
Storm Total:	31.7 mm
Monthly Rain:	88.4 mm
Yearly Rain (OCT):	160.3 mm
UV:	0.0
ET:	0.13 mm
Air Density:	1.239 kg/m ³
Est. Cumulus Base:	217 m
High Temperature:	12.3 C at 00:39
Low Temperature:	9.7 C at 08:47
High Heat Index:	12.3 C at 00:39
Low Wind Chill:	7.5 C at 08:41
High Humidity:	94 % at 06:02
Low Humidity:	87 % at 00:00
High Dewpoint:	10.2 C at 00:32
Low Dewpoint:	8.2 C at 08:44
High Barometer:	1012.0 mb at 09:41
Low Barometer:	1010.0 mb at

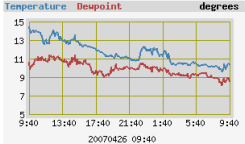


Facultad de Informatica - UPM
Campus de Montegancedo

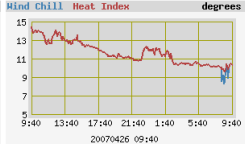
40.2 N - 3.5 W - 718 m

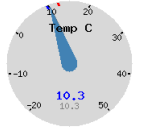
Weather Observations as of: 20070426 09:42:10
Sunrise:05:21 - Sunset:19:04 - Moon:Waxing 70% Full

Temperature Dewpoint degrees

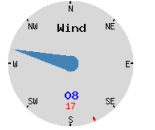


Wind Chill Heat Index degrees

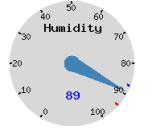




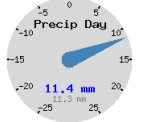
Temp C
10.3



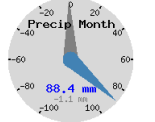
Wind
08
17



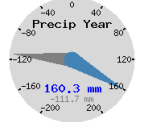
Humidity
89



Precip Day
11.4 mm



Precip Month
88.4 mm



Precip Year
160.3 mm



Setup
(February 5th, 2007)

Live weather station information
<http://www.ciclope.info/weather/>





Pedestal (*February 23rd, 2007*)





Floor (March 21st, 2007)





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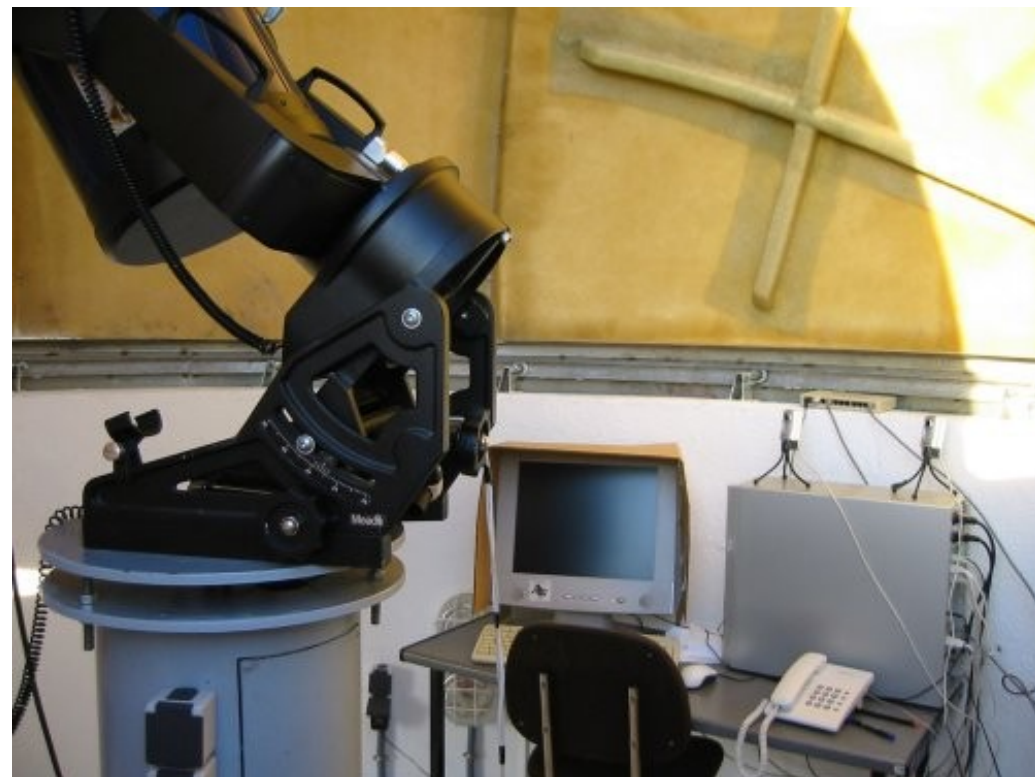


End of work (June 2007)



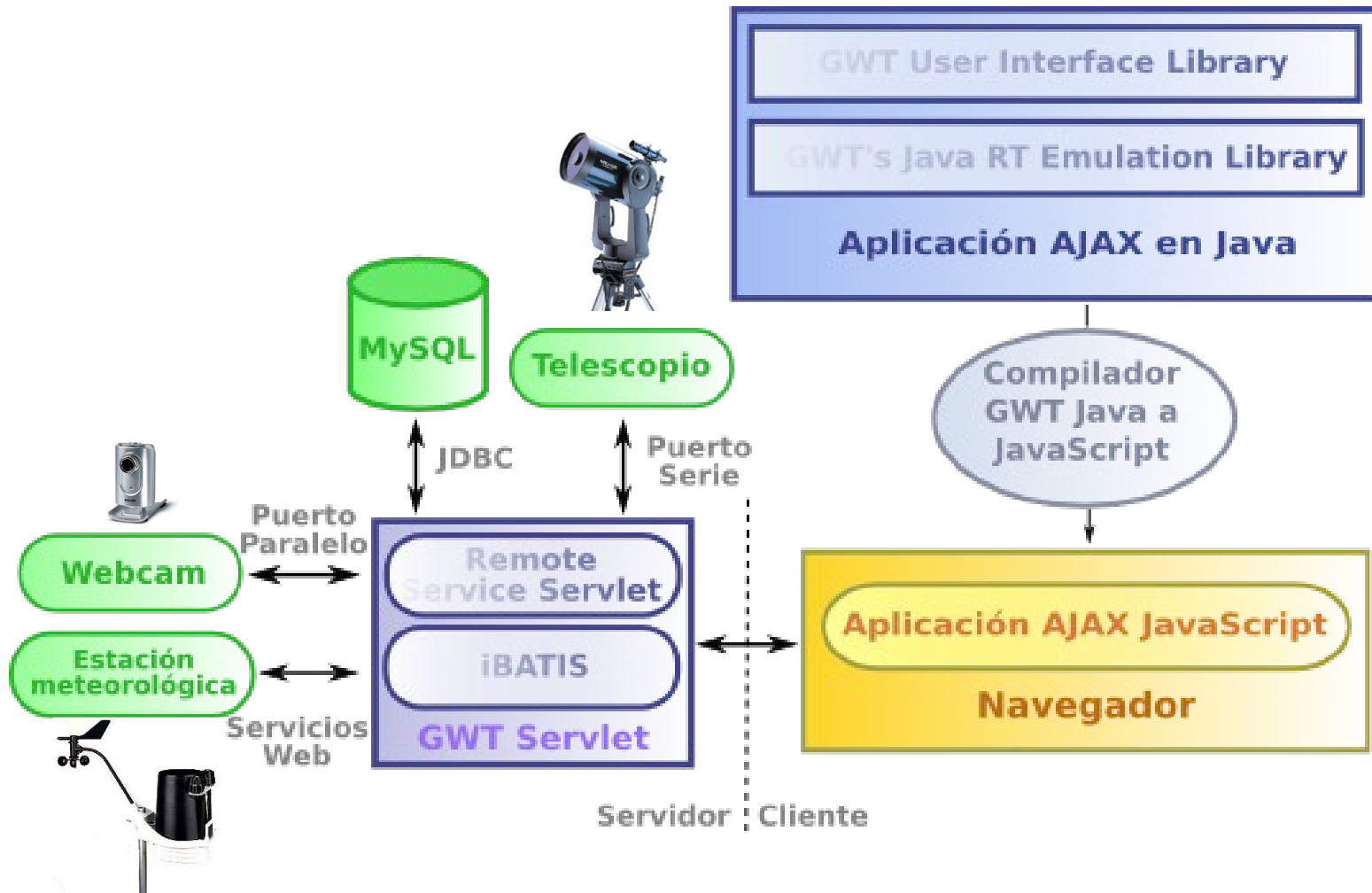
Montegancedo Observatory

<http://om.fi.upm.es>



Inside the observatory

3. Ciclope Astro Free Software Architecture





Montegancedo Observatory



Montegancedo Astronomical Observatory - Mozilla Firefox

Archivo Editar Ver Historial Marcadores Herramientas Ayuda

http://om.fi.upm.es/CiclopeAstro/?locale=en

Google

Jornadas de Automática > universidad ... Montegancedo Astronomical Obs... SourceForge.net: Ciclope Astro

Powered by [Ciclope Astro](#) beta Available Languages: EN | ES

Forgot your password? Username: Password: [Sign in](#) [Register!](#)

Home Public Telescope Album Chose a name! Reservations News Community

Welcome to Montegancedo Observatory!

This is the first free access astronomical observatory of the world, made by the "Collaborative Learning Group" [Ciclope](#).

The **aim** is to build up a **community** who learn Astronomy and, why not? maybe discover new something.

We would like to make the 100% of the timetable. It will be extended it, adding new experiments and observations to other celestial objects.

The [Access Conditions](#) will be changed to make the most of full time. We will try to please to the beginner and the advanced user. It is not an easy task! Please, be understanding.

All the content made by the community will be public, under "copyleft" licenses.

Visit the control interface and see what is happening now in the Observatory.

[Click here!](#)

07:16:02 2009/05/21

Webcam on UPM Observatory (updated each 20 seconds)

Horario apertura:
Lunes a Viernes de 7:00 - 16:00 (UTC).

Estado de la cúpula: CERRADA

¡Novedad! Concurso fotográfico
Sube tu foto de la Estación Espacial Internacional y [participa en el concurso](#).

¡Nuevo! ¡Entra y CHATEA!

07:15:10, 05/21/09 UTC	
Temperature	19.9 C
Wind Chill	19.9 C
HeatIndex	19.9 C
Humidity	51 %
Dewpoint	9.4 C
Barometer	1009.9 mb
Wind	ENE at 5 kph
Rain Today	0.0 mm
Rain Rate	0.0 mm
Sunrise	04:54 UTC
Sunset	19:31 UTC
Moon phase	Waning 13% Full
Prediction	Increasing clouds with little temperature change.

(Updated every minute)

Data obtained from [Ciclope Weather!](#)

THE UNIVERSE YOURS TO DISCOVER

INTERNATIONAL YEAR OF ASTRONOMY 2009

POLITÉCNICA

ASTRO CAM

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[Legal Information](#) | [Privacy Policy](#) | [Conditions of Use](#) | [Access Conditions to the Observatory Montegancedo](#)

Website designed for Firefox Browser [Optimized for 1024x768 resolution]

[W3C XHTML 1.0](#)

[W3C CSS 2.0](#)

http://sourceforge.net/projects/castro/



Ciclope Astro Free Software Features

- ✓ Web 2.0
 - ◆ Collaborative content generation by a community
 - ◆ Collaborative real time teleoperation of a observatory
 - ◆ The user is the protagonist
 - ◆ Easy interface, doesn't require technical knowledge
 - ◆ Access with a browser
- ✓ User profiles
 - ◆ Beginners / normal / advance / professional/ Administrator
- ✓ Karma based reputation system
- ✓ Core software
 - ◆ registration/logging
 - ◆ Reservation managing system
 - ◆ Teleoperation software(telescope, dome, cameras, focus)
 - ◆ Different scenarios / experiments





Web Collaborative Tools

- ✓ Currently
 - ◆ Astrophotography, image acquisition programming
 - ◆ Chat
 - ◆ Astronomical encyclopaedia (Wiki)
 - ◆ Astronomic album (folksonomy or collaborative tagging)
- ✓ Developing
 - ◆ Forum
 - ◆ Image processing tools
 - ◆ Questionnaires (question-answer quiz)
 - ◆ News (RSS)
 - ◆ Voice – IP (SIP)
 - ◆ P2P broadcasting

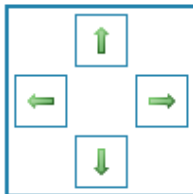


Interfaces for controlling the telescope

Basic Control

This panel lets control the telescope in an easy way, with the only next options:

- Move 1 sec. Telescope East, North, South and West at current slew rate.
- Set slew rate.
- Set focus speed and start focuser moving outward (toward objective) or inward (away from objective).



Speed:

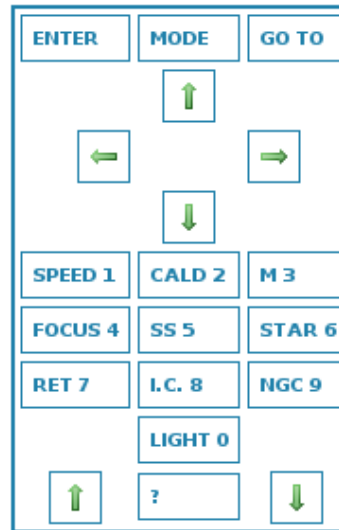


Focus:



Autostar II Hand Controller

This panel permits to control the telescope in an advanced way through the Autostar II Hand Controller.



Celestial Objects

This panel permits to search and select a celest object from database and also move the telescope towards its coordinates (RA and DEC).

All

Search

RA: h. m. s.

DEC: + ° ' "

Slew to these coordinates



Picture album

- Home
- Album
- Forum
- News
- Planetarium

Categories

- [Galaxies](#)
- [Nebulae](#)
- [Stars](#)
- [Planets](#)
- [Satellites](#)
- [Comets](#)
- [Others](#)

Catalogues

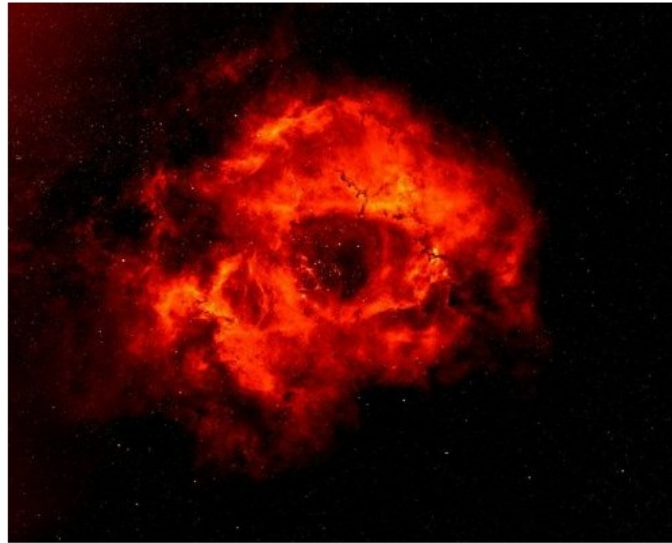
- [aguila](#) [planeta](#)
- [marte](#) [cometa](#)
- [crater](#) [espiral](#)
- [estrella](#) [luna](#)
- [nebulosa](#)
- [messier](#)
- [espiral](#)
- [aguila](#)
- [clúster](#) [jupiter](#)
- [ngc](#) [galaxia](#)
- [cúmulo](#) [hubble](#)
- [anillo](#) [meteorito](#)
- [espacio](#) [habitabile](#)
- [More tags](#)

Upload image

Home The Rosette Nebula X

Photography details

The Rosette Nebula



[Sign in to rate](#) [Add your vote](#)

Views: 68 Ratings: 33

Commentaries

[Add your commentary](#)



David

Tue Sep 04 2007 12:44:59 GMT+0200 (CEST)

Es una foto impactante, me ha encantado. La he puesto como fondo de escritorio :-). Os la recomiendo a todos



From: David

Added: Tue Sep 04 2007 12:44:54 GMT+0200 (CEST)

Category: Nebulae

Tags:

[tag1](#) [tag2](#) [tag3](#) [tag4](#) [tag5](#) [tag6](#) [tag7](#)

Object: Rosette Nebula

Coordinates:

Place: Observatorio FI-UPM

Telescope used: 200pxtelescope

Descriptions:

The Rosette Nebula is a large, circular H II region located near one end of a giant molecular cloud in the constellation Monoceros. The open cluster NGC 2244 is closely associated with the nebulosity, the stars of the cluster having been formed from the nebula's matter.

Related More from this user

Showing 1-5 of 5 [More](#)



Nebulosa de Orión

From: David
Tue Sep 04 2007 12:44:59 GMT+0200 (CEST)

Views: 67



The Rosette Nebula

From: David
Tue Sep 04 2007 12:44:59 GMT+0200





Managing reservation

Through this calendar you can reserve several intervals to control the telescope exclusively for the reservation owner.

Colour	Meaning
White	Free
Red	Busy
Yellow	My Reservation

You have **5** reservations each day

Each reservation is **10** minutes

To **reserve** one interval, click on the cell (marked as Free)

To **delete** one of your reservations, click it (marked as My Reservation)

< << May, 2007 >> >

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

4-5-2007

	00-10	10-20	20-30	30-40	40-50	50-60		00-10	10-20	20-30	30-40	40-50	50-60
0	Red						12						
1		Red	Red				13						
2			Yellow				14						
3				Red			15			Red			
4			Red				16						
5							17						
6					Yellow		18						
7							19			Yellow	Yellow		
8							20		Red				
9							21						
10							22						
11							23						

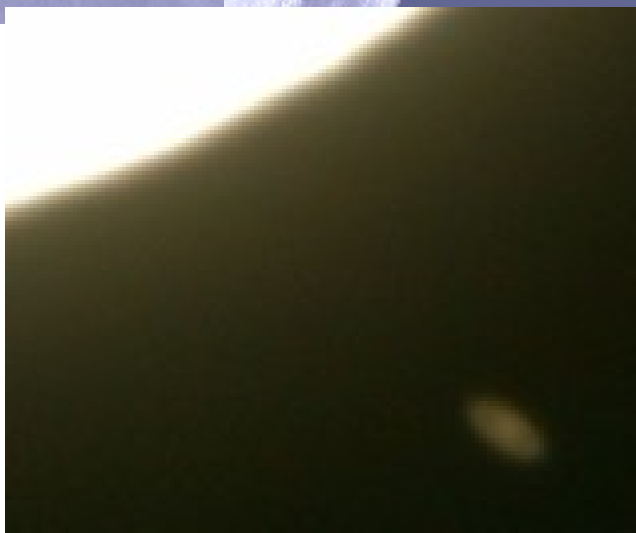


4.- *Astronomical Events & Broadcasting*

- ✓ **Broadcasting:** May 22nd, 2007 Hiding of Saturn by the Moon
- ✓ **Broadcasting:** March 3rd, 2007 Life broadcasting of Total Moon Eclipse
- ✓ **Event:** February 15th, 2008 (21:00h). Public dissemination activity in Science Museum CosmoCaixa Madrid
- ✓ **Broadcasting:** February 20th, 2008. Life broadcasting of Total Moon Eclipse
- ✓ **Event:** July 11th, 2008 (21:00h). Dissemination activity in CosmoCaixa Madrid: *The stormy pass of the solar system*
- ✓ **Broadcasting (*):** August 1st, 2008, Total Eclipse Novosibirsk (Russia)
- ✓ April- May 2009, **Events** in 7 different small villages in Spain
- ✓ **Broadcasting (*):** July 22nd, 2009



✓ **Broadcasting: May 22nd, 2007 Hiding of Saturn by the Moon**





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Montegancedo Observatory

<http://om.fi.upm.es>

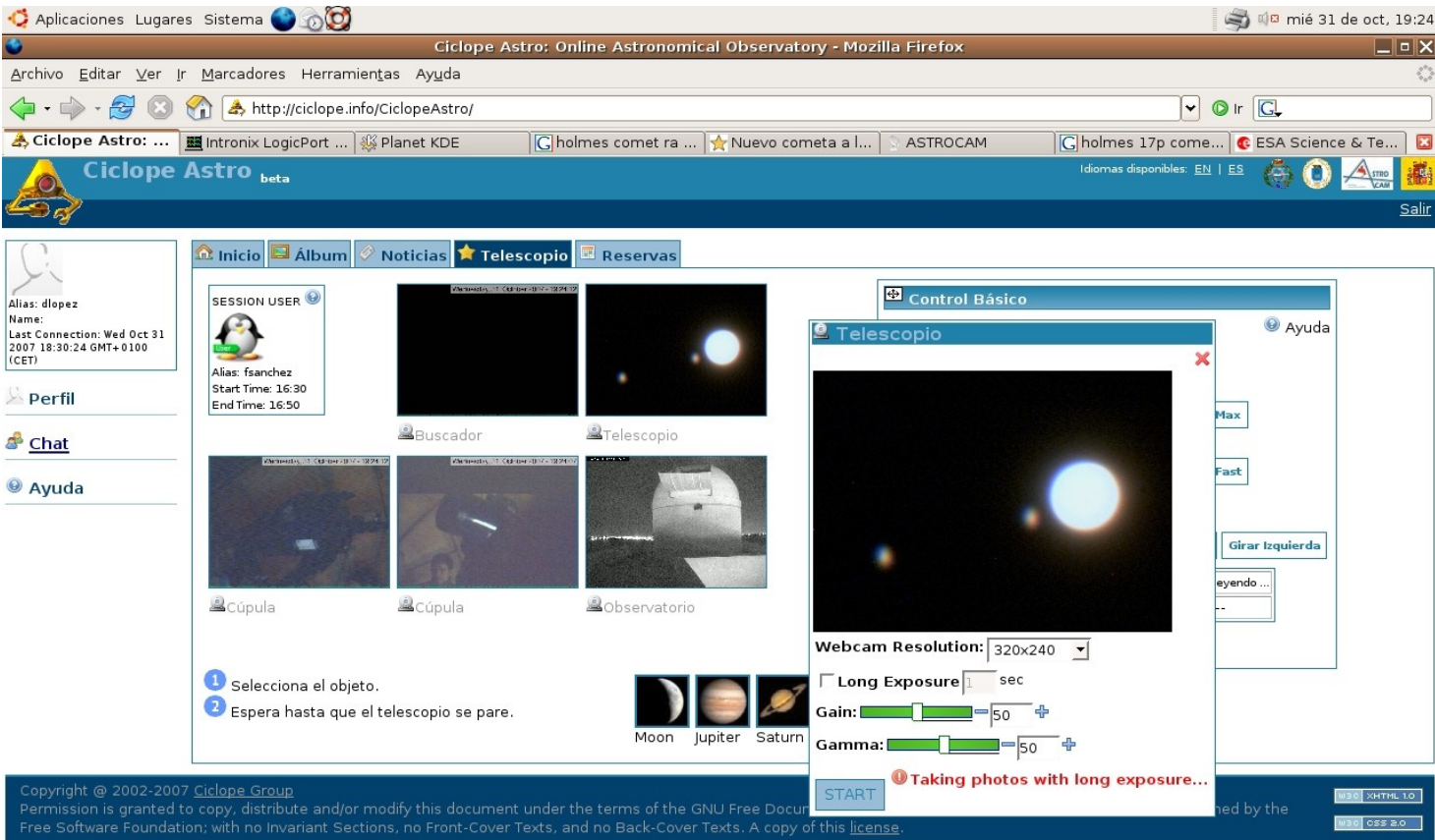


- ✓ **Broadcasting:** March 3rd, 2007 & February 20th, 2008.
Life broadcasting of Total Moon Eclipse





- ✓ **Event:** February 15th, 2008 (21:00h). Public dissemination activity in CosmoCaixa Madrid





Dome

Friday, 15. February 2008 - 22:03:14

Alias:
Name:
Last C
18:20:

Webcam Resolution: 320x240

Long Exposure: 0 sec Grid

Gain: -1 +

Exposure: 1 +

Community **Telescope** Chat



Finder (Long Exp.) Telescope (Long Exp.)



Finder (Long Exp.) Observatory

DEC: +26*27. Slew is Possible



Moon Mars M 42 M 45 NGC 884 NGC 869 Saturn

Basic Control Help

Telescope Status: Stop

Speed:

Focus:

Dome Status: Stop

Dome: Step by step

Step by step

RA:	04:54:56	DEC:	-15:28:56
Local Time	19:05:14	Left Time	---



Ciclope Astro

beta

Available Languages: EN | ES



Alias: dlopez

Name:

Last Connection: 15/02/2008
18:20:40

My Profile

[Home](#)
[News](#)
[Community](#)
[Telescope](#)
[Chat](#)

 SESSION USER
 Reservation Free!


Finder (Long Exp.)



Telescope (Long Exp.)



Dome



Finder (Long Exp.)



Observatory

- Select the object target.
- Wait until telescope stops.

Target: RA: 05:40.1 DEC: +26*27. Slew is Possible


Moon

Mars

M 42

M 45

NGC 884

NGC 869

Saturn

Finder (Long Exp.)



Webcam Resolution: 320x240

Long Exposure: 10 sec GridGain: +Exposure: +

START

STOP

APPLY

Taking photos with long exposure mode: '10' seconds. Wait Count new image!!!



Ciclope Astro

beta

Available Languages: EN | ES



Alias: dlopez

Name:

Last Connection: 15/02/2008
18:20:40

My Profile

[Home](#)
[News](#)
[Community](#)
[Telescope](#)
[Chat](#)

 SESSION USER

 Reservation Free!


Finder (Long Exp.)



Telescope (Long Exp.)



Dome



Finder (Long Exp.)



Observatory

- Select the object target.
- Wait until telescope stops.

Target: RA: 05:40.1 DEC: +26*27. Slew is Possible



Moon

Mars

M 42

M 45

NGC 884

NGC 869

Saturn

Dome



Webcam Resolution: 320x240

Long Exposure: 0 sec GridGain: -1 +Exposure: -1 +

START

STOP

APPLY

Help

Max

Fast

 Step by step Step by step

56



Alias: dlopez
 Name:
 Last Connection: 15/02/2008 18:20:40

SESSION USER
 Reservation Free!



Friday, 15, February 2008 - 22:18:39



Friday, 15, February 2008 - 22:18:39



Webcam Resolution: 320x240
 Long Exposure: 10 sec Grid
 Gain: -1 +
 Exposure: -1 +

Webcam Resolution: 320x240
 Long Exposure: 5 sec Grid
 Gain: -1 +
 Exposure: -1 +
 START STOP APPLY

! Taking photos with long exposure mode: '5' seconds. Wait new image!!!

- ✓ July 11th, 2008 (21:00h). Dissemination activity in CosmoCaixa Madrid: *The stormy pass of the solar system*





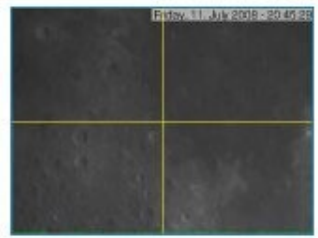
Alias: fsanchez
Name: Paaco
Last Connection:
11/07/2008 19:53:42

Mi Perfil

- Inicio
- Noticias
- Comunidad
- Telescopio**
- Chat

USUARIO SESIÓN

Reserva Libre



Buscador (Larga Exp.)



Telescopio (Larga Exp.)



Cúpula



Buscador (Larga Exp.)



Observatorio

- 1 Selecciona el objeto.
- 2 Espera hasta que el telescopio se pare.



Control Básico Ayuda

Estado Telescopio: Parado

Velocidad:

Enfoque:

Estado Cúpula: Parada

Cúpula:

 Paso a paso

Paso a paso

RA: Leyendo ... DEC: Leyendo ...
Hora Local: Leyendo ... Tiempo Restante: ---

Buscador (Larga Exp.)



Resolución Webcam:

Larga exposición: seg Rejilla

Ganancia:

Exposición:

Control Básico Ayuda

Estado Telescopio: Parado

Velocidad:

Enfoque:

Estado Cúpula: Parada

Cúpula: Paso a paso

Paso a paso

RA:	Leyendo ...	DEC:	Leyendo ...
Hora Local:	Leyendo ...	Tiempo Restante:	---

Buscador (Larga Exp.)



Friday, 11. July 2008 - 21:49:20

Control Básico

[Ayuda](#)

Estado Telescopio: Parado

Velocidad:

Enfoque:

Estado Cúpula: Parada

Cúpula:

 Paso a paso

Paso a paso

RA:	Leyendo ...	DEC:	Leyendo ...
Hora Local:	Leyendo ...	Tiempo Restante:	---

Resolución Webcam:

Larga exposición: seg Rejilla

Ganancia:

Exposición:

[W3C XHTML 1.0](#)

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ack-Cover Texts. A copy of this [license](#).

[W3C CSS 2.0](#)

solución 1024x768]

Buscador (Larga Exp.)



Control Básico Ayuda

Estado Telescopio: Parado

Velocidad:

Enfoque:

Estado Cúpula: Parada

Cúpula: Paso a paso

Paso a paso

RA:	Leyendo ...	DEC:	Leyendo ...
Hora Local:	Leyendo ...	Tiempo Restante:	---

Resolución Webcam:

Larga exposición: seg Rejilla

Ganancia:

Exposición:

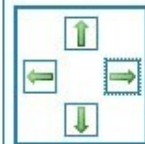
Friday, 11. July 2008 - 22:01:37



Control Básico

Ayuda

Estado Telescopio: Parado



Velocidad:

Guide Center Find Max

Enfoque:

Fine Slow Medium Fast



Estado Cúpula: Parada

Cúpula: Abrir Cerrar Parar Paso a paso

Giro Izda Giro Dcha Giro Parar Paso a paso

RA: Leyendo ... DEC: Leyendo ...
Hora Local: Leyendo ... Tiempo Restante: ---

Actualizar

Resolución Webcam: 640x480

Larga exposición: 0 seg Rejilla

Ganancia: -1

Exposición: -1

COMENZAR PARAR APLICAR

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ack-Cover Texts. A copy of this license.

XHTML 1.0

CSS 2.0

solución 1024x768]

Friday, 11. July 2008 - 22:02:10

Control Básico Ayuda

Estado Telescopio: Parado

Velocidad: Guide Center Find Max

Enfoque: Fine Slow Medium Fast

Estado Cúpula: Parada

Cúpula: Abrir Cerrar Parar Paso a paso

Giro Izda Giro Dcha Giro Parar Paso a paso

RA:	Leyendo ...	DEC:	Leyendo ...
Hora Local:	Leyendo ...	Tiempo Restante:	---

Actualizar

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solución 1024x768]

Resolución Webcam: 640x480

Larga exposición: 0 seg **Rejilla**

Ganancia: 0 -1 +

Exposición: 0 -1 +

COMENZAR PARAR APLICAR

Retransmisión Eclipse de Sol



1 Agosto de 2008

Shelios.com

Expedición a Novosibirsk (Rusia)

		<i>Tiempo Universal</i>	<i>Madrid (TU+2)</i>	<i>Novosibirsk (TU+7)</i>
	1º CONTACTO	9:41:19	11:41:19	16:41:19
	2º CONTACTO	10:43:52	12:43:52	17:43:52
	3º CONTACTO	10:46:11	12:46:11	10:46:11
	4º CONTACTO	11:45:04	13:45:04	11:45:04

Patrocinan





POLITÉCNICA

Montegancedo Observatory

<http://om.fi.upm.es>



EL PAÍS.com | Sociedad

Viernes, 1/8/2008, 17:00 h

Inicio Internacional España Deportes Economía Tecnología Cultura Gente y TV **Sociedad** Opinión Blogs Participa buscar

El Viajero | El País semanal | Domingo | Salud | Futuro | Educación

ELPAIS.com > Sociedad

Colapso en la web de la UPM durante la retransmisión en directo del eclipse

Cerca de un millón de internautas trataron de conectarse sin éxito a la página de la universidad

EUROPA PRESS / ELPAÍS.com - Madrid - 01/08/2008

Vota ☆☆☆☆☆ Resultado ★★★★★ 24 votos



Cerca de un millón de conexiones han colapsado el servidor del Centro de Supercomputación y Visualización de la Universidad Politécnica de Madrid (UPM) desde que el que se iba a retransmitir en directo vía Internet el eclipse total que ha oscurecido el disco solar en el Ártico, Siberia y China, según han informado fuentes del grupo de investigación Cíclope. Los lectores del ELPAÍS.com sí han podido seguir la retransmisión a través de la [página de NASA TV](#), el canal público de televisión *online* de la Administración espacial de EE UU.

NASA

(Administración Nacional de la Aeronáutica y del Espacio)
A FONDO

Sede: Washington, D.C. (Estados Unidos)

Al entrar en la página eclipse.cesvima.upm.es los internautas han encontrado el mensaje "forbidden" (prohibido en español). Fuentes de Cíclope han asegurado que los problemas no se



Momento cumbre de este fenómeno que no se volverá a repetir hasta 2026. - NASA



- ✓ Sun Eclipse July 22nd, 2009 China
 - ◆ P2P technology (plug-in for Mozilla Firefox)



5. Free observation in Montegancedo Observatory

Current Observation:

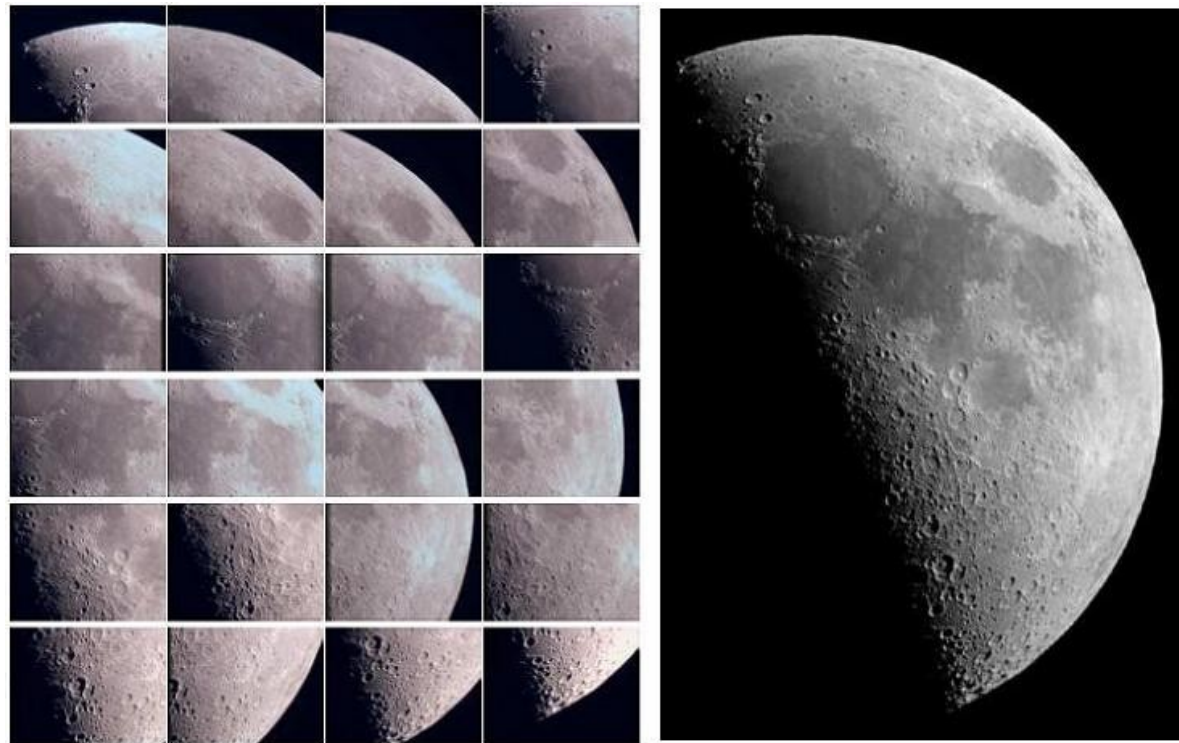
- ✓ Sun H-alfa

Next Observation:

- ✓ Moon observation and mosaic generation

Future Observation

- ✓ Planets observation
- ✓ Measure of distance to stars





Montegancedo Observatory



Montegancedo Astronomical Observatory - Mozilla Firefox

Archivo Editar Ver Historial Marcadores Herramientas Ayuda

http://om.fi.upm.es/CiclopeAstro/?locale=en

Jornadas de Automática > universidad ... Montegancedo Astronomical Obs...

Powered by **Ciclope Astro** beta Available Languages: EN | ES

Forgot your password? Username: Password: [Sign in](#) [Register!](#)

Home Public Telescope Album Chose a name! Reservations News Community

Welcome to Montegancedo Observatory!

This is the first free access astronomical observatory of the world, made by the "Collaborative Learning Group" [Ciclope](#).

The **aim** is to build up a **community** who learn Astronomy and, why not? maybe discover new something.

We would like to make the 100% of the timetable. It will be extended it, adding new experiments and observations to other celestial objects.

The [Access Conditions](#) will be changed to make the most of full time. We will try to please to the beginner and the advanced user. It is not an easy task! Please, be understanding.

All the content made by the community will be public, under "copyleft" licenses.

Visit the control interface and see what is happening now in the Observatory.

[Click here!](#)

07:11:10, 05/21/09 UTC

Temperature	19.6 C
Wind Chill	19.6 C
HeatIndex	19.6 C
Humidity	52 %
Dewpoint	9.4 C
Barometer	1010.0 mb
Wind	ENE at 0 kph
Rain Today	0.0 mm
Rain Rate	0.0 mm
Sunrise	04:54 UTC
Sunset	19:31 UTC

Moon phase: Waning 13% Full

Prediction: Increasing clouds with little temperature change.

(Updated every minute)

Data obtained from [Ciclope Weather!](#)

Horario apertura:
Lunes a Viernes de 7:00 - 16:00 (UTC).

Estado de la cúpula: CERRADA

¡Novedad! Concurso fotográfico
Sube tu foto de la Estación Espacial Internacional y [participa en el concurso](#).

¡Nuevo! ¡Entra y CHATEA!

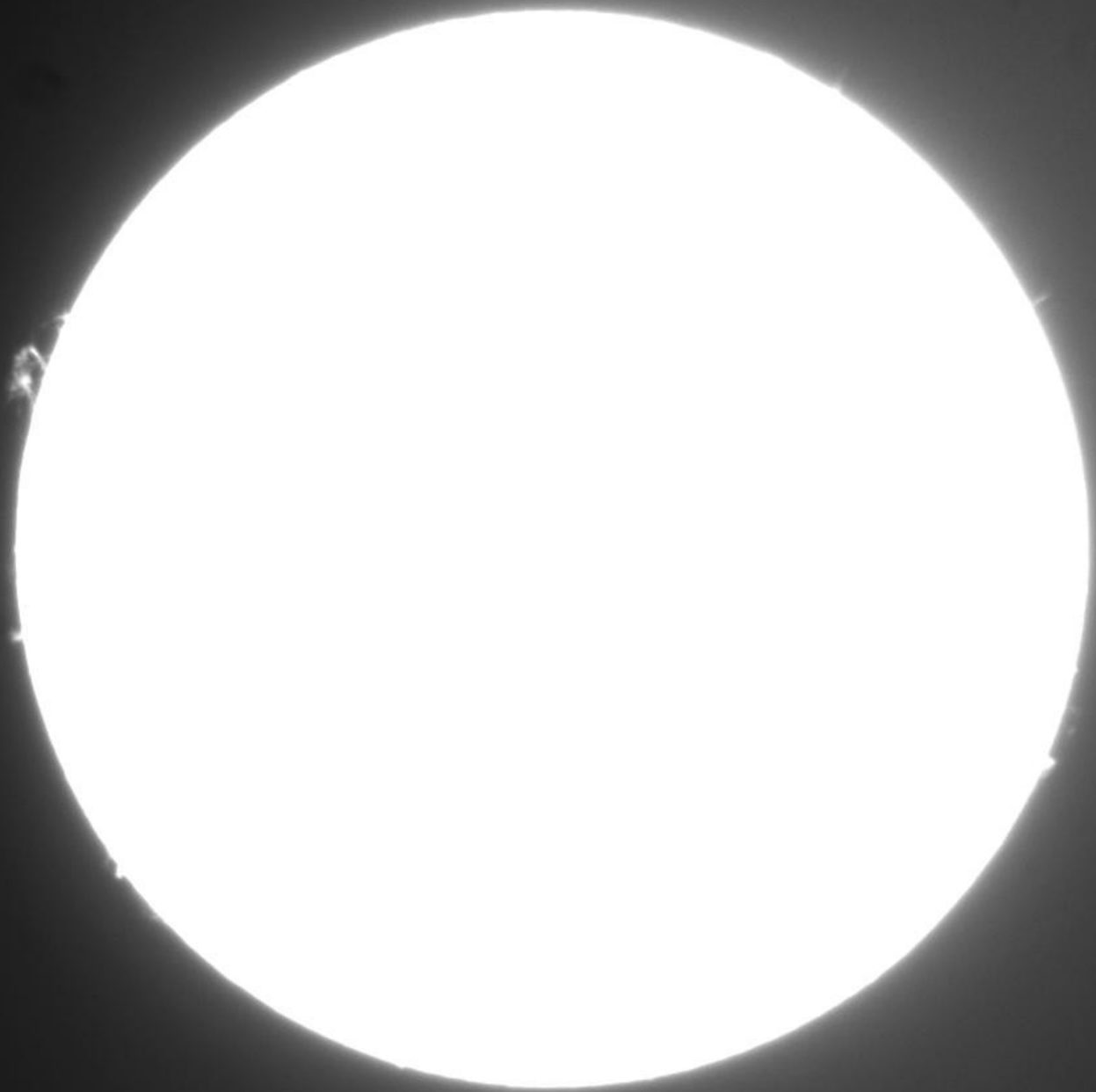
Webcam on UPM Observatory (updated each 20 seconds)

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[Legal Information](#) | [Privacy Policy](#) | [Conditions of Use](#) | [Access Conditions to the Observatory Montegancedo](#)

Website designed for Firefox Browser [Optimized for 1024x768 resolution]

Terminado





ELPAIS.com > Yo, periodista

Yo, CELSO FRADE

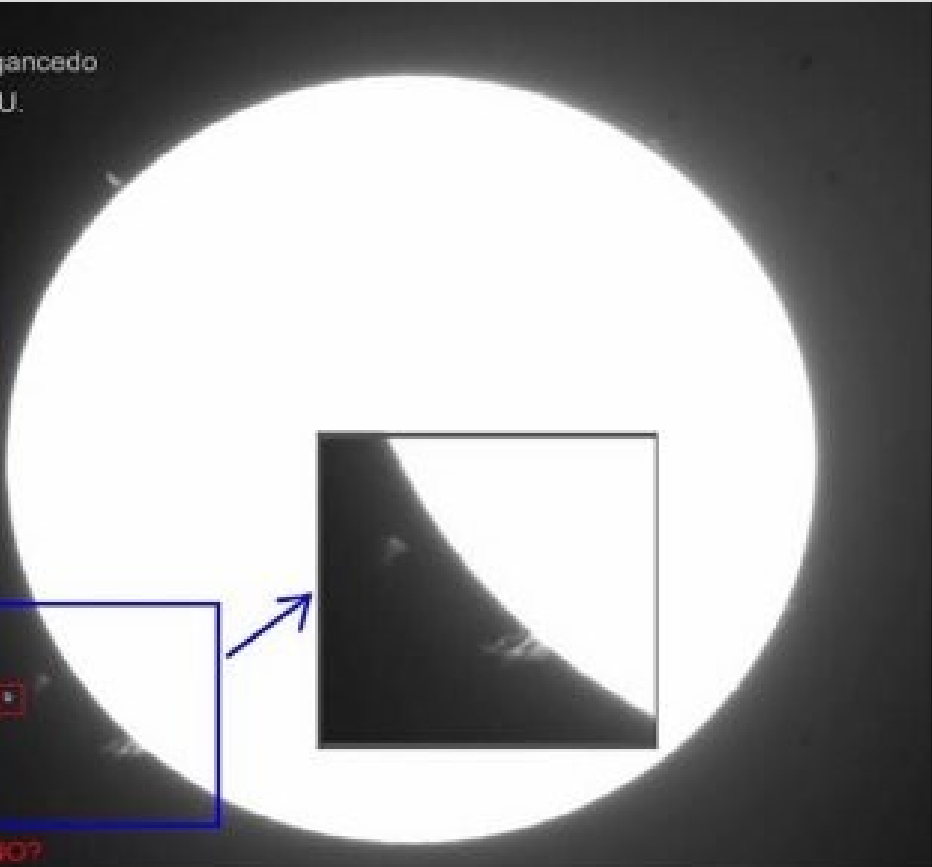
Observatorio en el aula

El primer observatorio astronómico del mundo gratuito acaba de ser inaugurado en Madrid

CELSO FRADE - Madrid - 19/02/2009

vota ☆☆☆☆☆ Resultado ★★★★★ 64 votos

Celso Frade Jiménez
Observatorio Montegancedo
17-02-2009 12:22 T.U.



IMPRESIONANTE, NO?



TAD: Telescopio Abierto Divulgación

Powered by [Ciclope Astro](#)

Username: Password:

- [Inicio](#)
- [Reservas](#)
- [Componentes](#)
- [Recursos Didácticos](#)
- [Manuales](#)
- [Pantallazos](#)
- [Licencia](#)
- [Contactar](#)

¿Qué es el TAD?

El TAD es un telescopio controlado remotamente a través de Internet usando un simple navegador web. Los alumnos, usando una simple conexión a Internet podrán dirigir, con la ayuda de un docente y Unidades Didácticas ya existentes (ver www.Astroaula.net menú de Recursos Didácticos), un proyecto de observación astronómica real.

El TAD está instalado en el Observatorio del Teide (Instituto de Astrofísica de Canarias, Tenerife).

¡¡Ya es posible reservar noches de observación en el telescopio!!



Webcam en el Observatorio del Teide (actualizada cada 5 segundos)







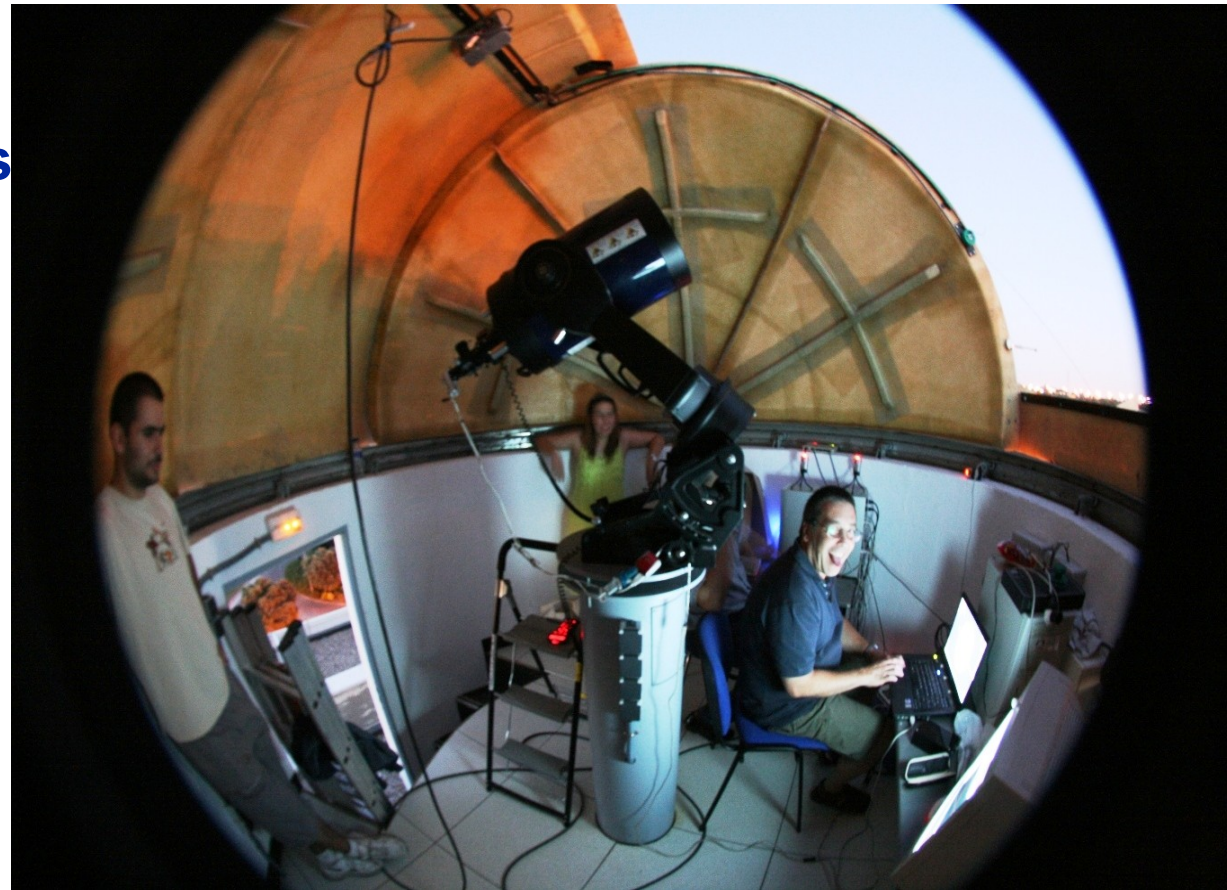




6. Future work

Network of telescopes for educational purposes and Citizen Science

- ✓ Asteroids tracking
- ✓ PHAs & NEOs
- ✓ Spatial debris
- ✓ Hexoplanets
- ✓ GRB's



7. Conclusions

- ✓ FOSS Architecture (Free Open Source Software) for the teleoperation of remote remote
- ✓ Easily adapted to any new piece of hardware
- ✓ Web 2.0, we offers tools and methodology for on-line learning
- ✓ All the knowledge is made by the community
- ✓ Documentation and software available in the project site
<http://www.ciclope.info>
 - <http://sourceforge.net/projects/castro/>
 -





POLITÉCNICA

Montegancedo Observatory

<http://om.fi.upm.es>



7. Acknowledge

This project is partially funded by

- ✓ **Comunidad de Madrid** with the project **ASTROCAM:**
Astrophysical Network of Madrid (S-0505-ESP-0237)
 - www.astrocam.es
 - www.madrid.org
- ✓ Previous finance
 - www.ciclope.info/finance_es





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<http://om.fi.upm.es>



Workshop on Robotic Autonomous Observatories
Torremolinos, Malaga, Spain, 18-21 May 2009

Montegancedo Observatory: The First Free Access Astronomical Observatory Teleoperated Via the Internet

<http://om.fi.upm.es>



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