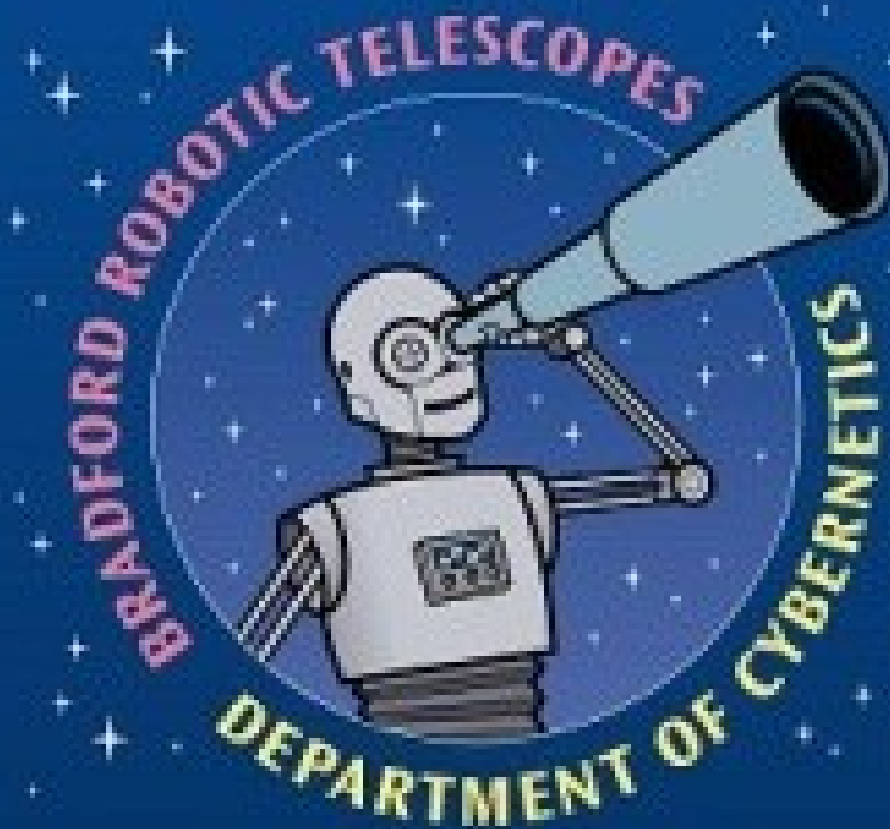


Astronomie par Internet

par Frédéric Berton

pour les Rencontres du Ciel et de l'Espace 2006

Bradford Telescopes in Tenerife and Australia
Working with Faulkes, Liverpool and RoCoTTo
<http://www.telescope.org/>



Pupil centred – teacher resourced

Free interactive access to the stars



www.telescope.org

Un télescope sur Internet.

Accès gratuit

www.telescope.org

- Le Bradford Robotic Telescope (BRT) est installé dans les îles Canaries sur l'île de Tenerife
- Sur le site de l'observatoire : « Observatorio del Teide » de l'institut d'astrophysique des Canaries.
- L'observatoire est à une altitude de 2400 mètres





Atlantic Ocean

Provincia de Santa Cruz de Tenerife

La Palma



Santa Cruz de la Palma

La Gomera



San Sebastián de la Gomera



Valverde

El Hierro

Tenerife



Pico del Teide

Santa Cruz de Tenerife



Gran Canaria

Las Palmas de Gran Canaria

Provincia de Las Palmas

Fuerteventura



Puerto del Rosario

Lanzarote



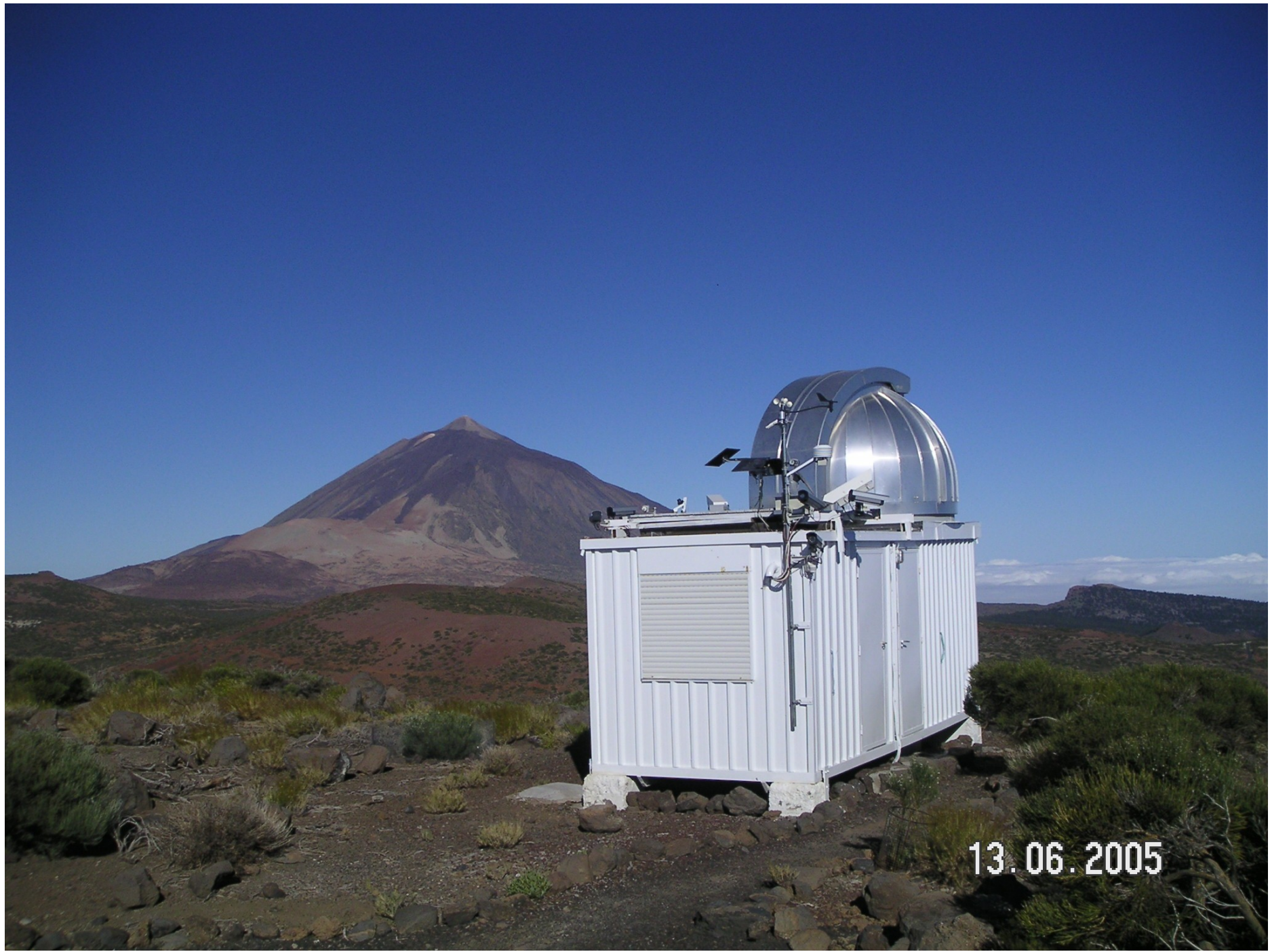
Arrecife

LE SITE D'INSTALLATION DU BRT









13.06.2005



5 NI85

13.06.2005

Pourquoi le télescope n'est il pas toujours opérationnel ?

La réponse en images.

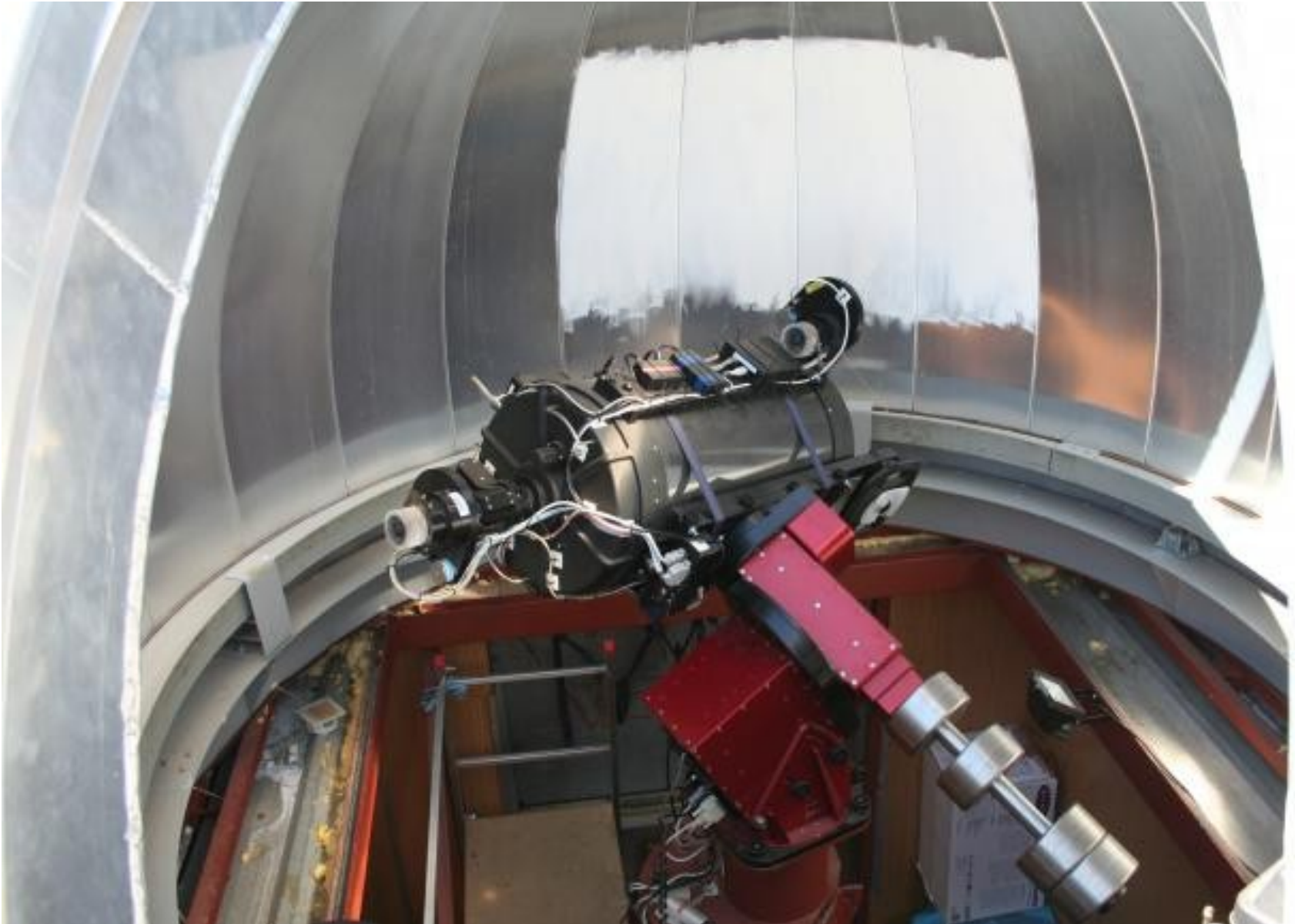






LE TELESCOPE

La monture





La monture est une **PARAMOUNT ME** avec sa suite logiciel Software **BISQUE**.

Soit 30 Kg de monture, pour une charge utile max de 68 Kg

Les capteurs « d'ambiance »

- 1) **Teide-Stars-Cam** – camera noir et blanc faible luminosité
- 2) **Dome-Cam** – caméra couleurs pour voir le dôme
- 3) **Tiede-Cam** – caméra couleurs pointée sur le mont Tiede (Tedde)
- 4) **Analemma-Cam** – camera couleurs grand champ, avec un filtre solaire
- 5) **Road-Cam** – Camera couleurs, pointée vers l'est (vers la route)
- 6) **Pier-Cam** – (non visible) caméra noir et blanc faible luminosité pour voir le pied, la monture et le télescope
- 7) **Pole-Star-Cam** – (non visible) camera noir et blanc ultra sensible pointée sur la polaire.



Les capteurs « d'ambiance »



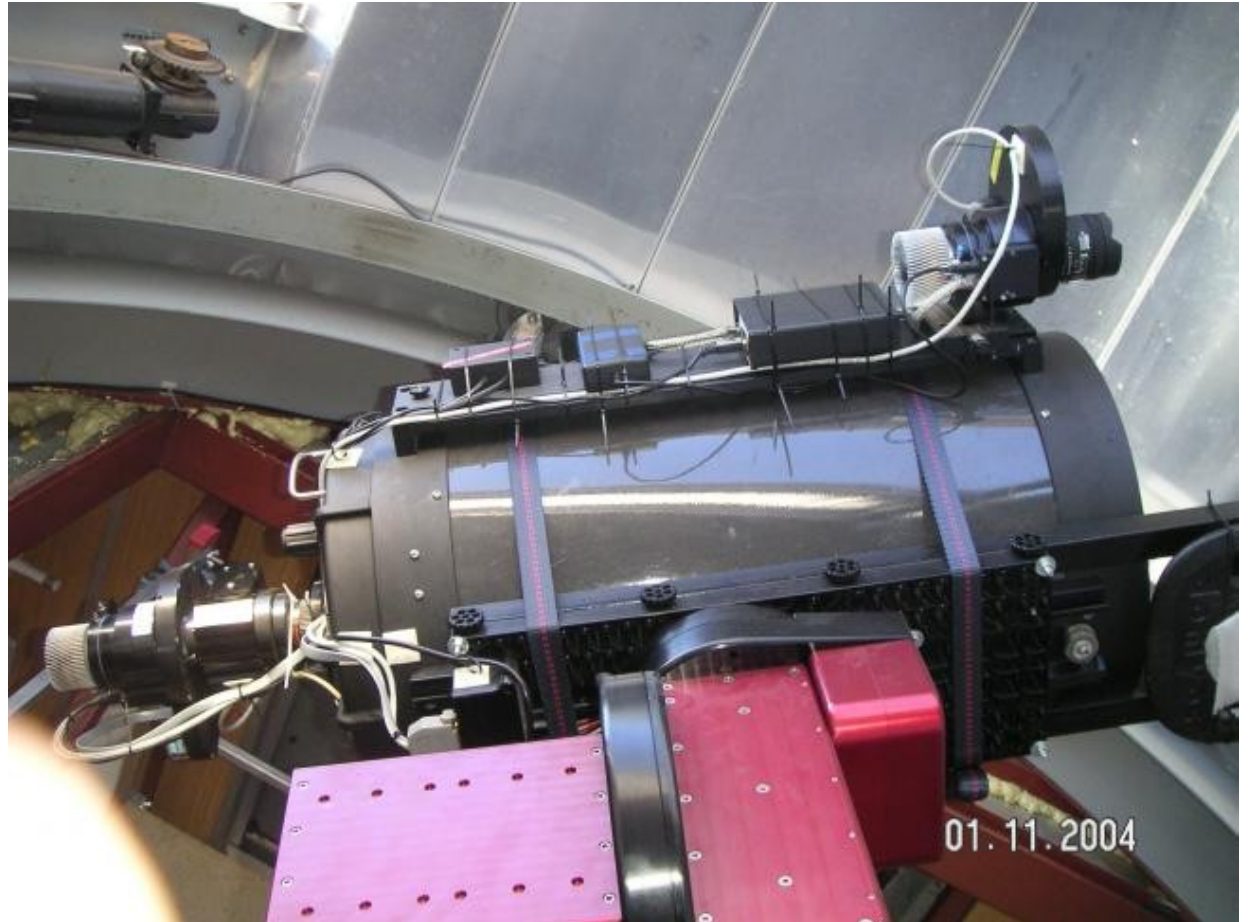
Les Capteurs « Annexe »

- La monture supporte en plus du télescope des capteurs annexes.
 - Le capteur **CONSTELLATION**
 - Le capteur **AMAS**
- Tout les capteurs sont équipés de la même camera CCD.
 - FLI MaxCam ME2 capteur E2V CCD47-10
1kx1k Pixels de 13 μ carré

Le capteur CONSTELLATION

Un capteur grand champ pour faire des images des constellations

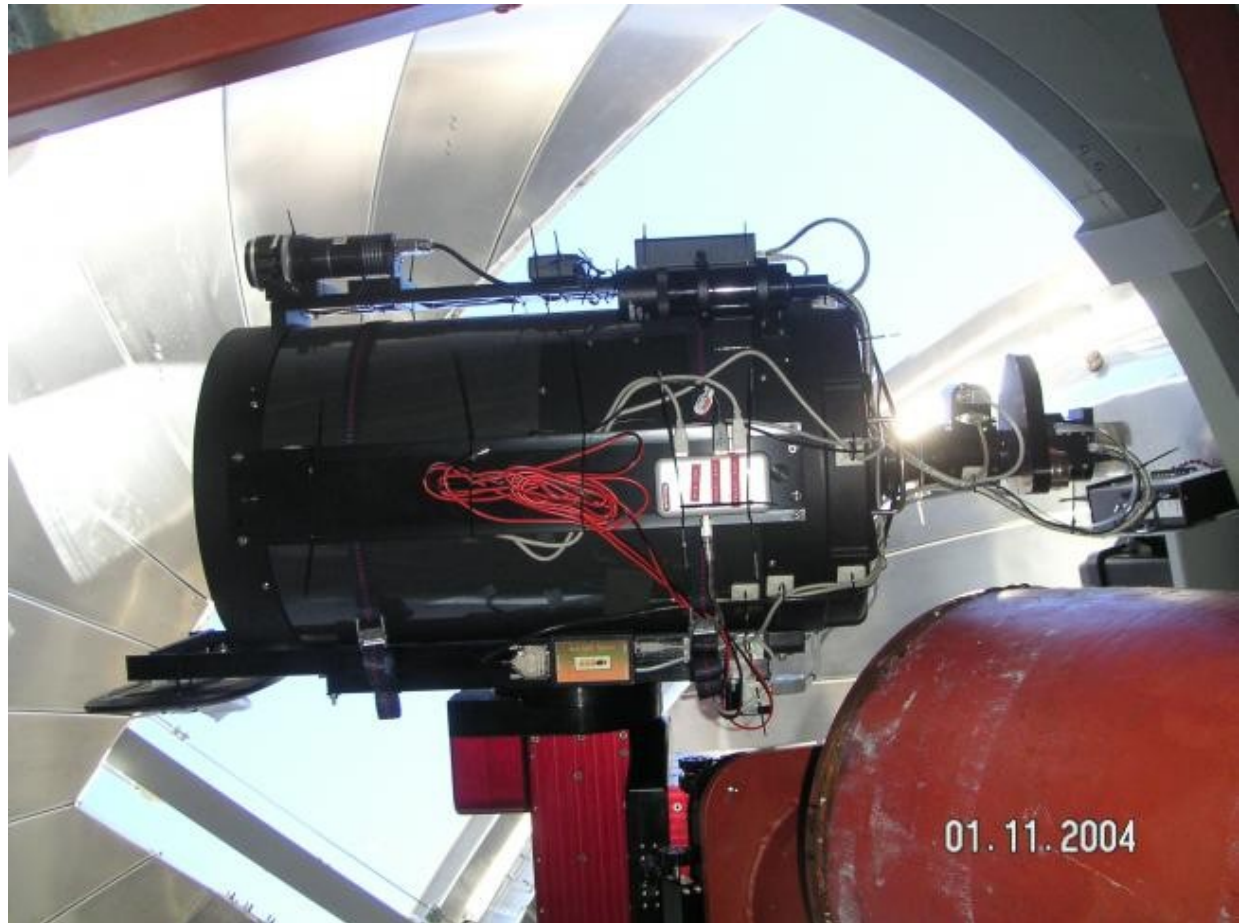
- En fait, c'est un téléobjectif de 16 mm
- Champ 40° carré



Le capteur AMAS

Dédié à la photo d'objets stellaires de grand champ

- C'est un téléobjectif de 200
- Champ : 3° carré



LE TELESCOPE

Dédié à la prise de photos de galaxies.

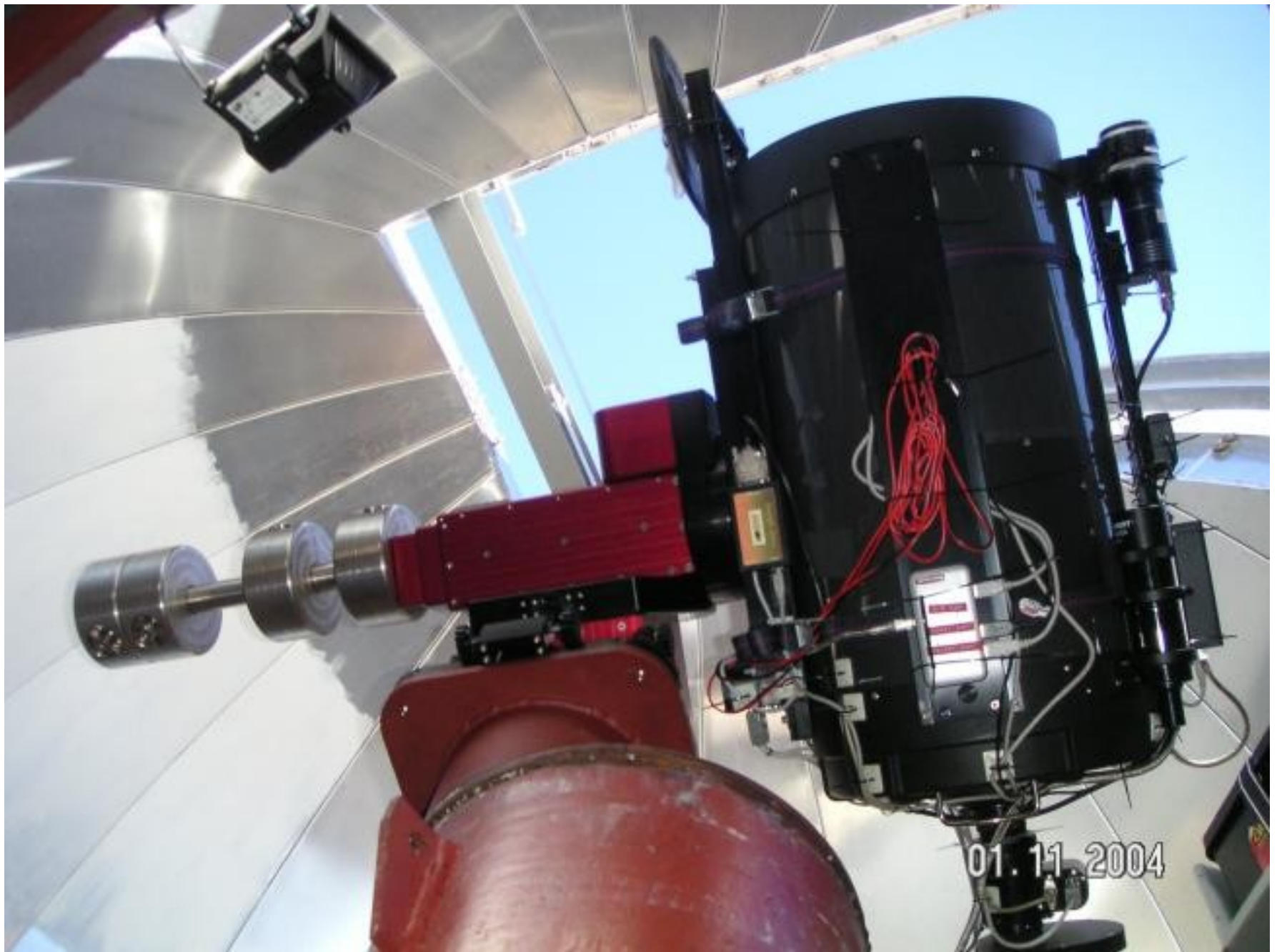
- CELESTRON C14, Schmidt-Cassegrain 14 pouces (365 mm) focale 3910 mm,
- équipé d'un réducteur de focale 0.67x (F/D 7.4 au lieu de 11)
- Champ: 24 ' carré
- Camera FLI MaxCam ME2 capteur E2V CCD47-10 1kx1k Pixels de 13 micron carré
- Mise au point OPTEC TCF-S (Temperature Controlled Focuser)
- Grayford motorisé avec compensation de la température





01.11.2004





L'INFORMATIQUE ET LE LOGICIEL

L'informatique du télescope



Control

- Sous Linux, il prend en charge la planification des jobs, en fonction de la météo. Il assure le contrôle de mise au point et des roues à filtre. La base de données est PostgresSQL

Point

- Sous Windows 2000 , il fait tourner « TheSky » et « Automadome » de Software Bisque. TheSky pour le contrôle de la monture, Automadome pour la gestion du dôme.

Weather

- Sous Linux, il assure l'acquisition et la gestion des données météo.

Le site WEB : www.telescope.org

The screenshot shows a Microsoft Internet Explorer browser window displaying the website for the Bradford Robotic Telescope. The browser's address bar shows the URL <http://www.telescope.org/>. The website header features the text "BRADFORD ROBOTIC TELESCOPE" and a large, stylized logo "BRT". The date "Sunday 24 September" is displayed in the top right corner. A navigation menu includes links for "MAIN PAGE", "SYSTEM STATUS", "USE THE TELESCOPE", "WEATHER REPORTS", "WEBCAMS", "FORUMS", "PROJECT NEWS", "CONTACT US", "TELESCOPE STATISTICS", "IMAGE GALLERY", "PHOTO GALLERIES", "EDUCATIONAL MATERIAL", and "REGISTER FOR AN ACCOUNT".

The main content area is divided into three columns:

- Login:** A section with input fields for "Username" and "Password", a "Login" button, and links for "Forgotten your details? Click here" and "Click here to register for a new account".
- Welcome to the Bradford Robotic Telescope Website:** A central text block stating: "The Bradford Robotic Telescope is unique. If you want to wonder at the grandeur and beauty of your star sign it will take a colour image for you covering all the stars in your constellation. It will show you the majesty of the sky seen by our grandparents before the age of light pollution. Look at our [image gallery](#)!" Below this, it says: "The telescope is focused on space and astronomy access for all. It has its own".
- Image from the Gallery:** A section featuring a red-tinted astronomical image of a star field. Below the image, it reads "NGC 7000 | Avg. rating 5.0".

At the bottom of the page, there are three blue buttons labeled "Educational Material", "Teachers", and "General Interest". The Windows taskbar at the bottom shows the "démarrer" button, several application icons, and the system tray with the time "19:35".

Accueil mes Jobs

Bradford Robotic Telescope

SU

Se

Welcome

- Hello berton

[Your Menu](#)

[Your Jobs](#)

[Log out](#)

Main Menu

[Main page](#)

[System status](#)

[Use the telescope](#)

[Weather reports](#)

[Image gallery](#)

[Information](#)

[Photo galleries](#)

[Webcams](#)

[Telescope statistics](#)

[Forums](#)

[Project news](#)

[Contact us](#)

Telescope.org Personal Menu

Greetings berton! You last logged in on the 24 September 2006 at 18:37, from 84.4.205.144.

You have 13 newly completed jobs!

Your account

[Edit your details](#)

Your job requests

[Your Jobs](#)

[Submit a job request](#)

Other jobs

[Search the jobs database](#)

[View the gallery](#)

Weather Data

[Weather data viewer](#)

Log out

[Log out](#)

Saisie d'un Job

Bradford Robotic Telescope

Welcome	Job Constructor
- Hello berton	Click here for a guide to how to take good images
Your Menu	<u>Part 1 - What to observe</u>
Your Jobs	Object Type Not yet selected, click change >>>
Log out	Object ID Not yet selected, click change >>>
Main Menu	Object Name Not yet selected, click change >>> <input type="button" value="Change"/>
Main page	<u>Part 2 - Telescope selection</u>
System status	Telescope Type Auto select
Use the telescope	Telescope ID Auto select
Weather reports	Telescope Name Auto select
Image gallery	
Information	<u>Part 3 - Other information</u>
Photo galleries	Filter selection Not selected yet
Webcams	Exposure Time Not selected yet
Telescope statistics	Dark Frame Not selected yet
Forums	Job comments None
Project news	<input type="button" value="Submit Job"/> <input type="button" value="Clear request"/>

Liste des jobs

Bradford Robotic Telescope

Sunday 24 September

Search telescope.org

Welcome

Hello berton

[Your Menu](#)

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[Contact us](#)

Your observation requests

R.ID	Object Type	Object ID	Object Name	Status	Comment
35698	MESSIER	20	The Triffid Nebula	Awaiting scheduling	M20-200000-RGB
35697	MESSIER	51	The Whirlpool Galaxy	Complete	M51-200000-RGB
35696	MESSIER	11	The Wild Duck Cluster	Awaiting scheduling	M11-200000-RGB
35695	MESSIER	33	The Triangulum Galaxy	Complete	M33-200000-RGB
35694	MESSIER	11	The Wild Duck Cluster	Awaiting scheduling	M11-200000
9877	MESSIER	27	The Dumbell Nebula	Complete	rgb6000 clustercam
9876	MESSIER	27	The Dumbell Nebula	Complete	rgb100000
9875	MESSIER	27	The Dumbell Nebula	Complete	rgb80000
9874	MESSIER	27	The Dumbell Nebula	Complete	rgb60000
9873	MESSIER	27	The Dumbell Nebula	Complete	40000rgb
9492	MESSIER	27	The Dumbell Nebula	Complete	20000 rgb
9491	MESSIER	22		Complete	15000 rgb
9490	NGC	436		Complete	15000 rgb
9489	NGC	663		Complete	15000 rgb
9488	MESSIER	103		Complete	15000 rgb
9412	MESSIER	13	The Great Hercules Globula Cluster	Complete	b10000
9411	MESSIER	13	The Great Hercules Globula Cluster	Complete	r10000
9410	MESSIER	13	The Great Hercules Globula Cluster	Complete	15000
9409	MESSIER	13	The Great Hercules Globula Cluster	Complete	10000
9319	NGC	7000		Complete	
9318	MESSIER	13	The Great Hercules Globula Cluster	Complete	
8922	SSBODY	MARS	The Planet Mars	Complete	mars 25 no filter
8921	SSBODY	MARS	The Planet Mars	Complete	mars 50 no filter

Recherche d'un Job (simple)

Bradford Robotic Telescope

Sunday 24

[Search tel](#)

Welcome

Hello berton

[Your Menu](#)

[Your Jobs](#)

[Log out](#)

Main Menu

[Main page](#)

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[Project news](#)

[Contact us](#)

Job Lookup

Search by any ID number:

Go directly to a Job ID:

Go directly to a Request ID:

Preset searches

- Latest jobs done
- Latest jobs done that completed successfully
- Successful jobs done this night (jobs done between the last 16:00 and now)
- Successful jobs done the previous night (jobs done between the last 16:00 and the previous 16:00)
- All jobs done this night (jobs done between the last 16:00 and now)
- All jobs done the previous night (jobs done between the last 16:00 and the previous 16:00)
- Waiting jobs ordered by submission time, earliest first
- Jobs on hold

Recherche d'un Job (Avancée)

Advanced Job Search

All fields are optional.

Object type:

Object ID: (E.g. If you have selected a catalogue in "object type" above, you can enter the object number here. If you have selected SSBODY or CONSTELLATION above you can enter the name of the object here.)

Object Name: (E.g. Some catalogue objects have names friendly names, you can search for those here.)

Exposure time (ms):

Minimum:

Maximum:

Filter type:

Telescope:

La galerie

Bradford Robotic Telescope

SU
Se

Welcome

Hello berton

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Latest Submissions to the Gallery

1.



Average rating: **0**

Job ID: 25858

Object Type: CONSTELLATION

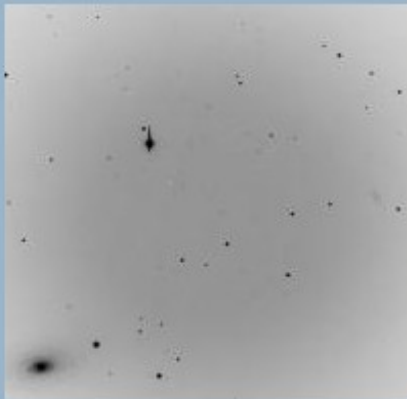
Object ID: Taurus

Object Name: Bull

Submit time: 17:30 on Wednesday 20 September 2006

[View full size](#)

2.



Average rating: 0

Job ID: 24277

Object Type: MESSIER

Object ID: 63

Object Name: The Sunflower Galaxy

Submit time: 21:47 on Tuesday 19 September 2006

[View full size](#)

3.



Average rating: 0

Job ID: 24272

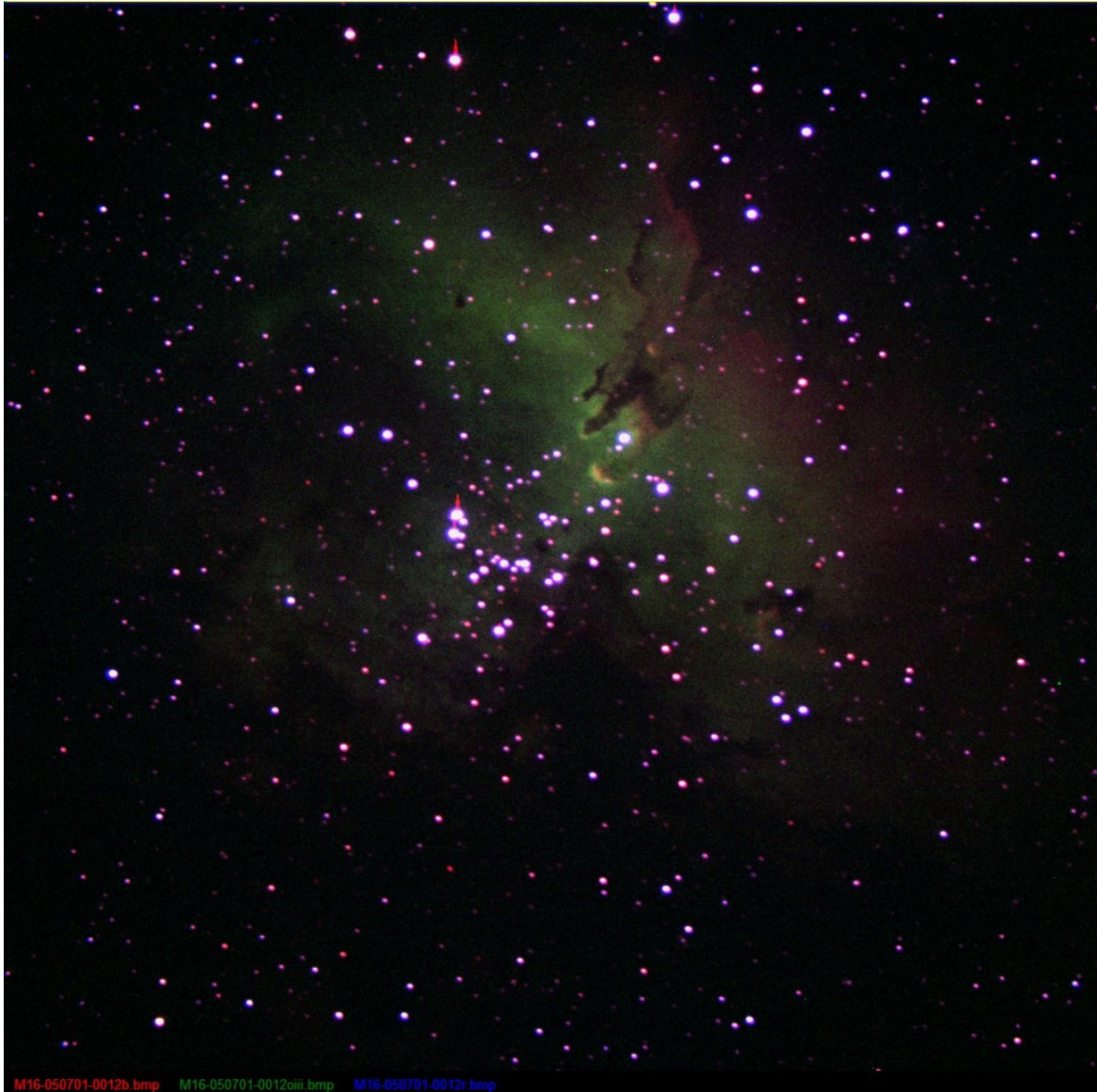
Object Type: MESSIER

Object ID: 51

Object Name: The Whirlpool Galaxy

LES RESULTATS

M16



- M16,
- combining multiple jobs.
- Processed by **Scott Virtes**

M20 Triffid Nebula



- BRT job IDs:
18094-18097,
- processed by
Duncan Miller

NGC7293



- NGC 7293.
- Combination of BRT jobs 6729, 6730, 6731, 6732 and 6733.
- Processed by **Dennis Wigley**

M51



- M51
- The Whirlpool Galaxy.
- Processed by **Dennis Wigley**

M27



- M27
- Dumbbell
- Processed by **Fred Berton**
- 1 exposure of 3 minutes

Statique du projet

User Accounts

Total number of users:7845

Number of teacher accounts:662

Number of student accounts:3046

Number of guest accounts:4127

Jobs

Number of waiting jobs:1099

Number of waiting requests:1570

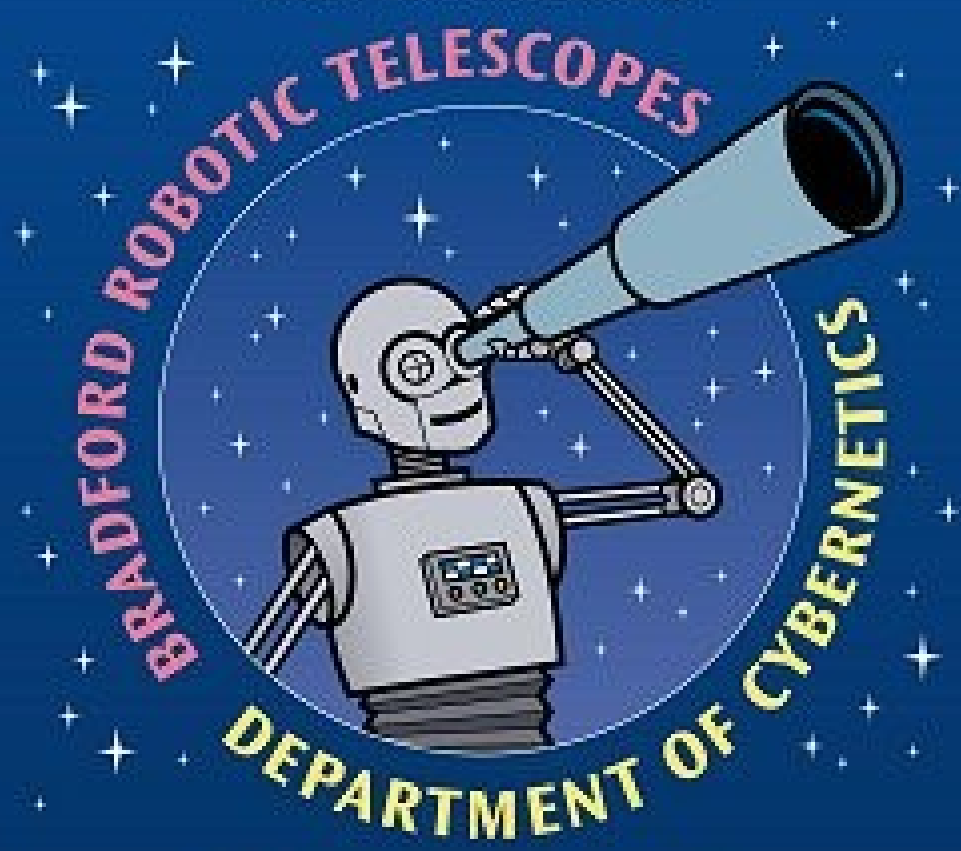
Number of completed jobs:13485

Number of completed requests:17247

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Working with Faulkes, Liverpool and RoCoTTo

<http://www.telescope.org/>



Pupil centred – teacher resourced

Free interactive access to the stars

