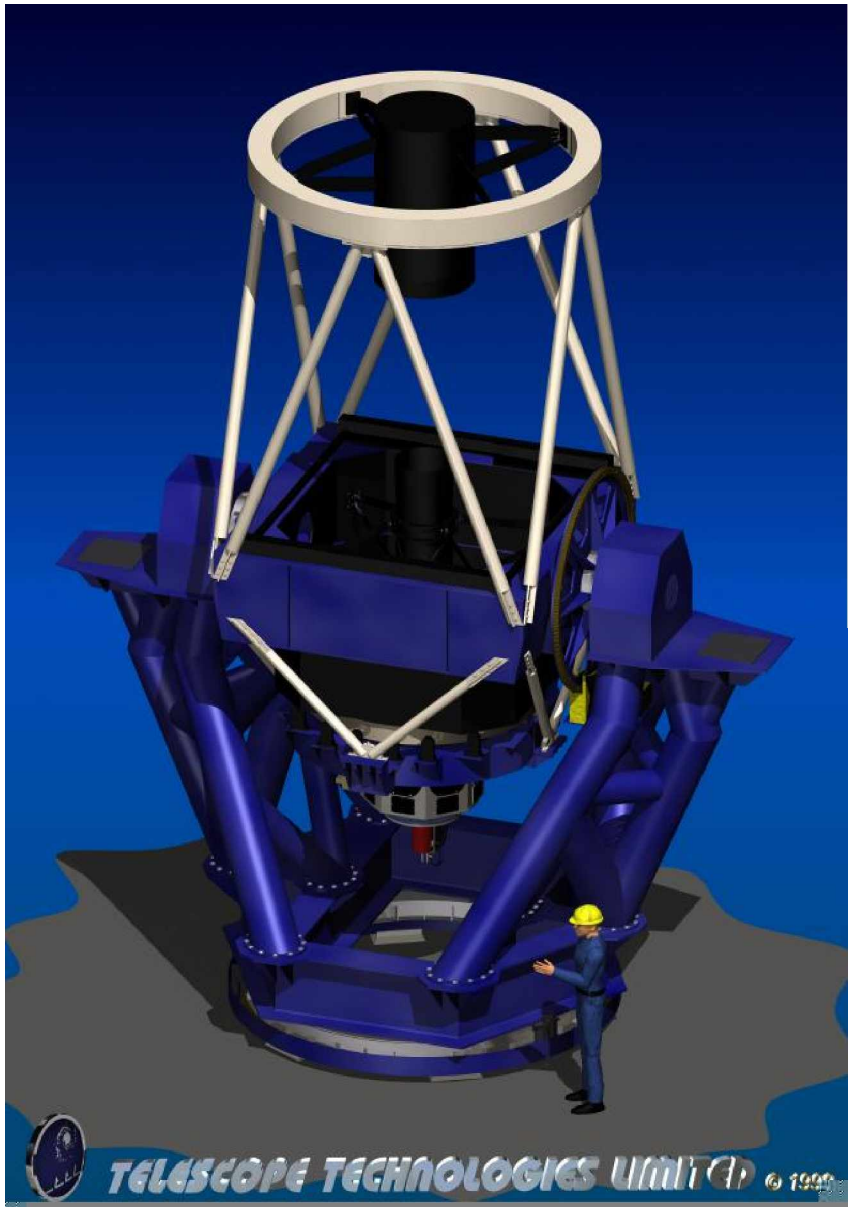
Hawaii und zurück in 30 Minuten

Lothar Kurtze, Felix Hormuth

Sternwarte Weinheim
Faulkes Telescope Development Partner

Das Asteroidenprojekt am Faulkes Telescope North

8. Tagung der VdS-Fachgruppe 'Kleine Planeten', Heppenheim 2005

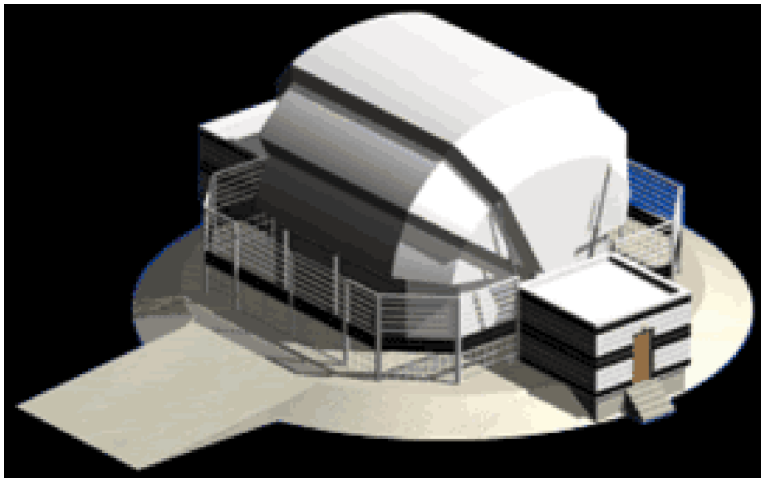


8 Meter

Spiegeldurchmesser: 2m

Gesamtgewicht: 25 t

Faulkes Telescopes:



~£10 million donation from
“Dill Faulkes Educational Trust”

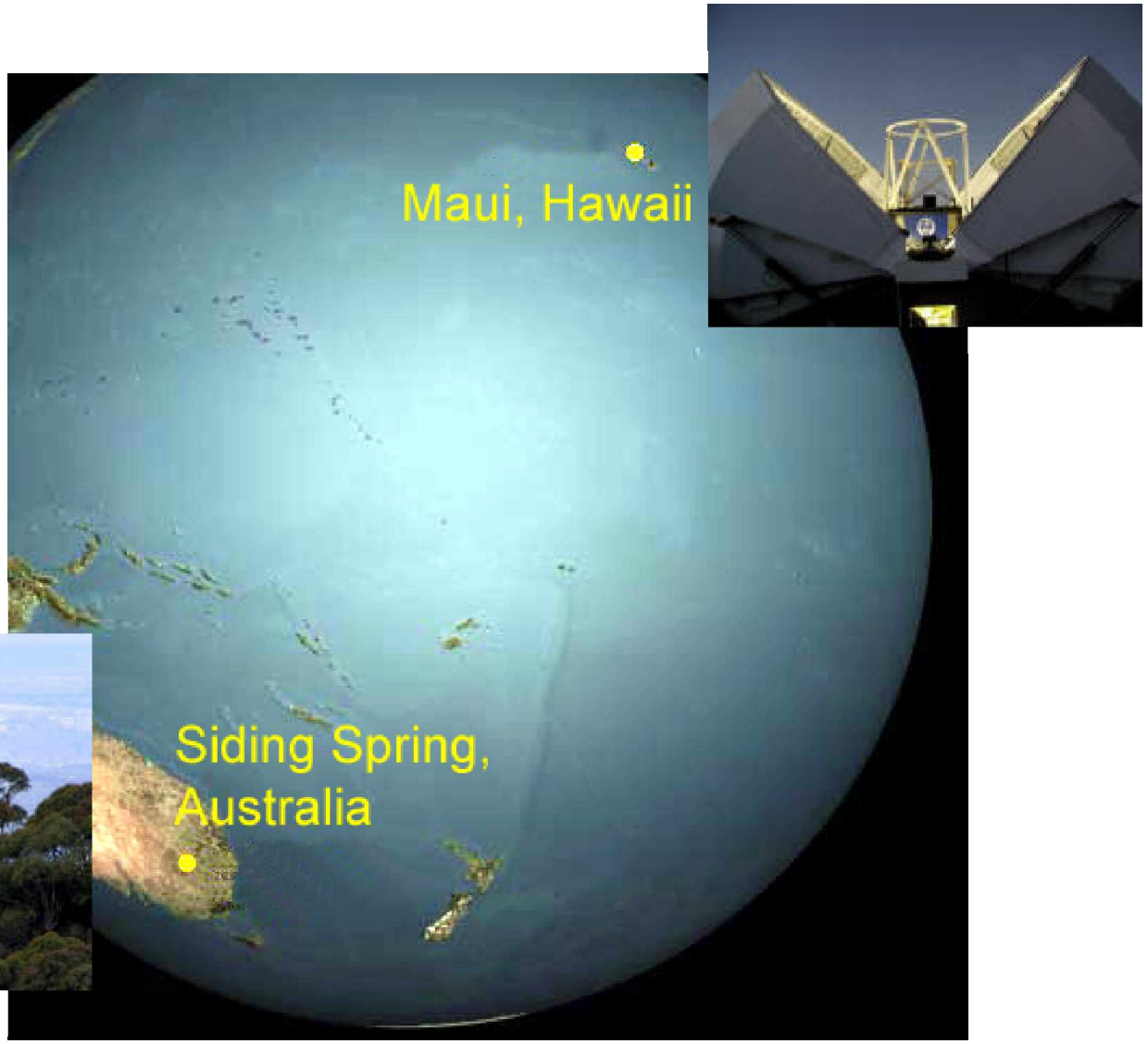
~£700k Particle Physics and
Astronomy Research Council (PPARC)

~£600k Department for Education and Skills (DfES)

Largest telescopes in the world dedicated to education

Internet controlled

Fully robotic



Real-time, real science, real scientists

Technische Daten:

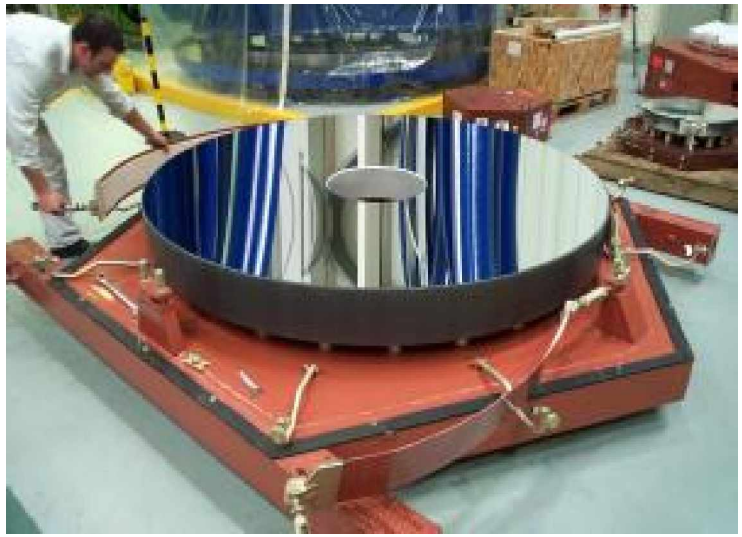
2 Meter Hauptspiegel

Ritchey-Chretien f/10 Optik

4 Cassegrain side ports

1 Cassegrain wide-field port

2 Nasmyth ports



Nachführgenauigkeit <0.2 arcsecs / min

Auflösung < 0.4 arcsecs

Die Ausstattung: (Stand Juni 2005)

2048 x 2048 pixel CCD

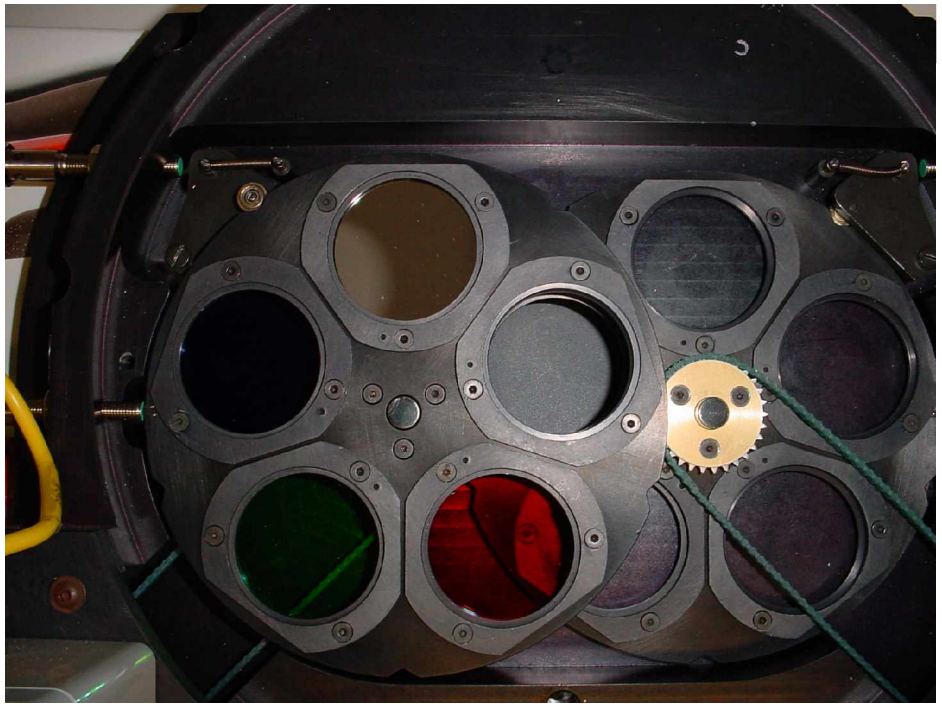
4.6 x 4.6 arcmins field of view

Sloan filter set - UBVRI

H alpha filter

O III narrow band filter

Basic spectrographs



F65 – Haleakala - Faulkes Telescope North

Sternwarte Weinheim

Das Asteroidenprojekt am Faulkes Telescope North

8. Tagung der VdS-Fachgruppe 'Kleine Planeten', Heppenheim 2005

FAULKES TELESCOPE

Das Team

Schulen
z.B. King‘s school, Canterbury

David Bowdley
FT Educational Manager
University of Cardiff

Jay R. Tate
The Spaceguard Centre
Knighton, Wales

Lothar Kurtze
FT Development Partner
TU-Darmstadt

Felix Hormuth, MPIA Heidelberg
Karin Sonnenberg, Universität Heidelberg

bisherige Veröffentlichungen von F65:

30 MPEC (incl. DOU, FT Ast. Pr. + UKAPP)

207 Positionen numerierter Kleinplaneten (FT Ast. Pr. + UKAPP)

1147 Positionen nicht numerierter Kleinplaneten (FT Ast. Pr. + UKAPP)

Stand 14.6.2005

FT Asteroid observations

Publication:	Positions	Objects	Discoveries
MPC 2005 Feb. 24:			
FT Asteroid project	305	110	2
UKAPP	259	56	0
Institute of Astronomy, Hawaii	98	9	1
total	*662*	*175*	*3*
MPC 2004 Oct. 28			
(all users)	42	12	0
MPC 2004 Aug. 30			
FT Asteroid project	108	10	0
In total:			
FT Asteroid project *) :	**455**	**132**	**2**
all users:	812	197	3

*) including all observations of MPC Oct. 2004 where the data can not be separated

UKAPP:

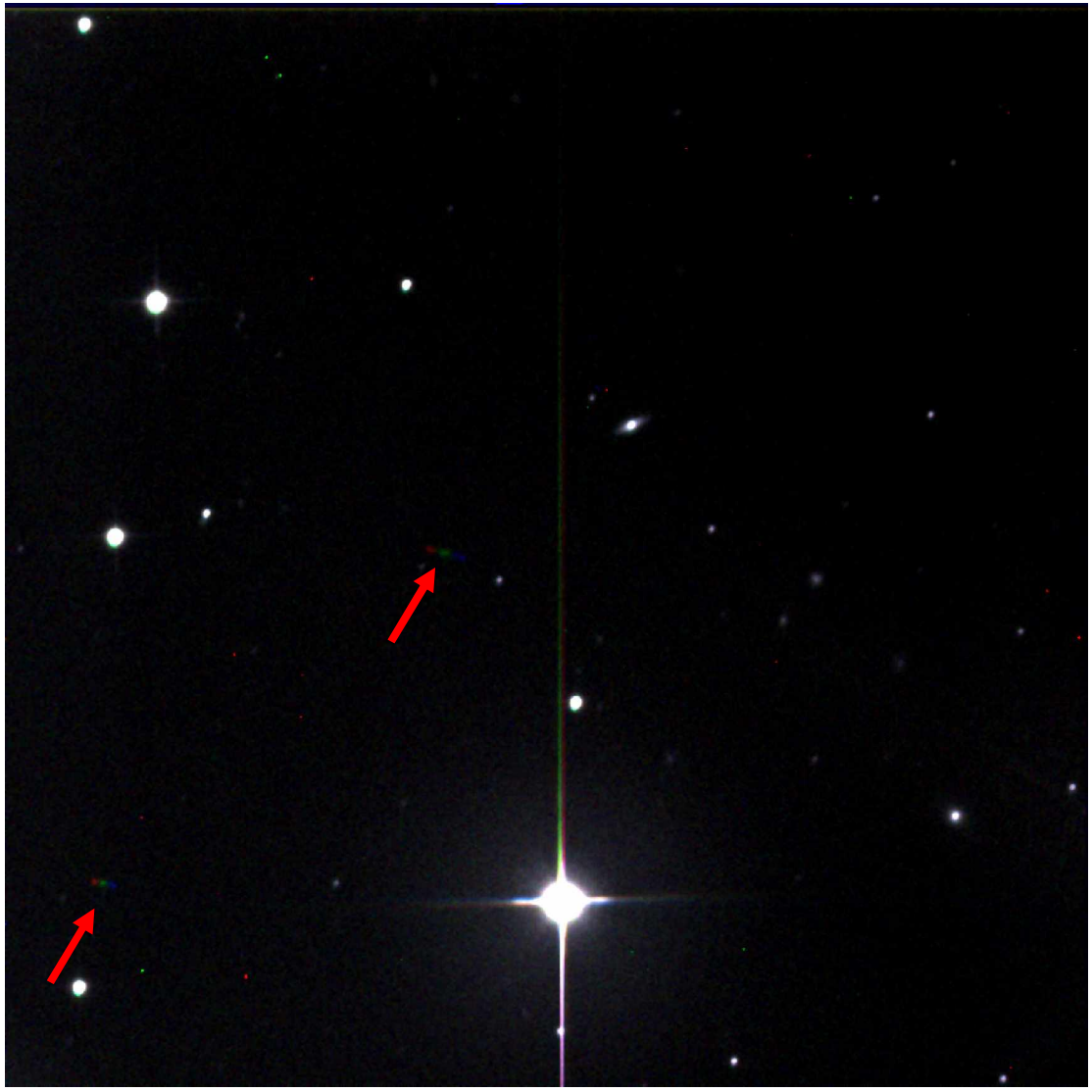
Project Description:

UKAPP is a programme to provide essential follow-up measurements of Near-Earth Objects (NEOs) discovered by other facilities. Roughly 75% of the time spent observing will be allocated to astrometric observations of NEOs, to improve the accuracy with which we know their orbits. The rest will be spent measuring the physical properties of NEOs. UKAPP is run from the Astrophysics and Planetary Science Division at Queen's University Belfast.

People involved:

Dr Alan Fitzsimmons, Dr. Stephen Lowry, Mr. Colin Snodgrass and Mr. Liam O'Donnell.

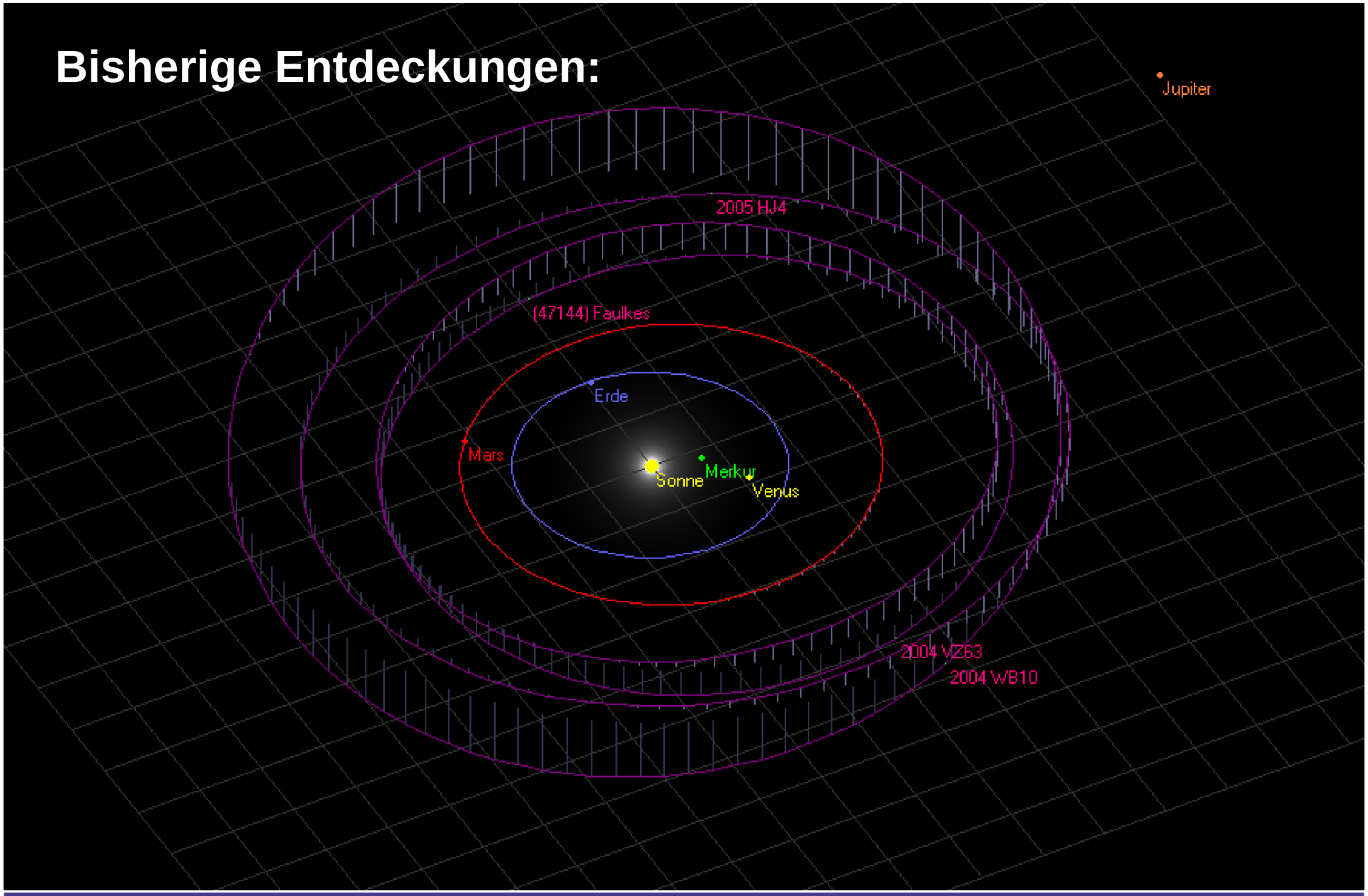
Beobachtung von PHA 1998 CS1 (PHA) am 9. Nov. 2004:



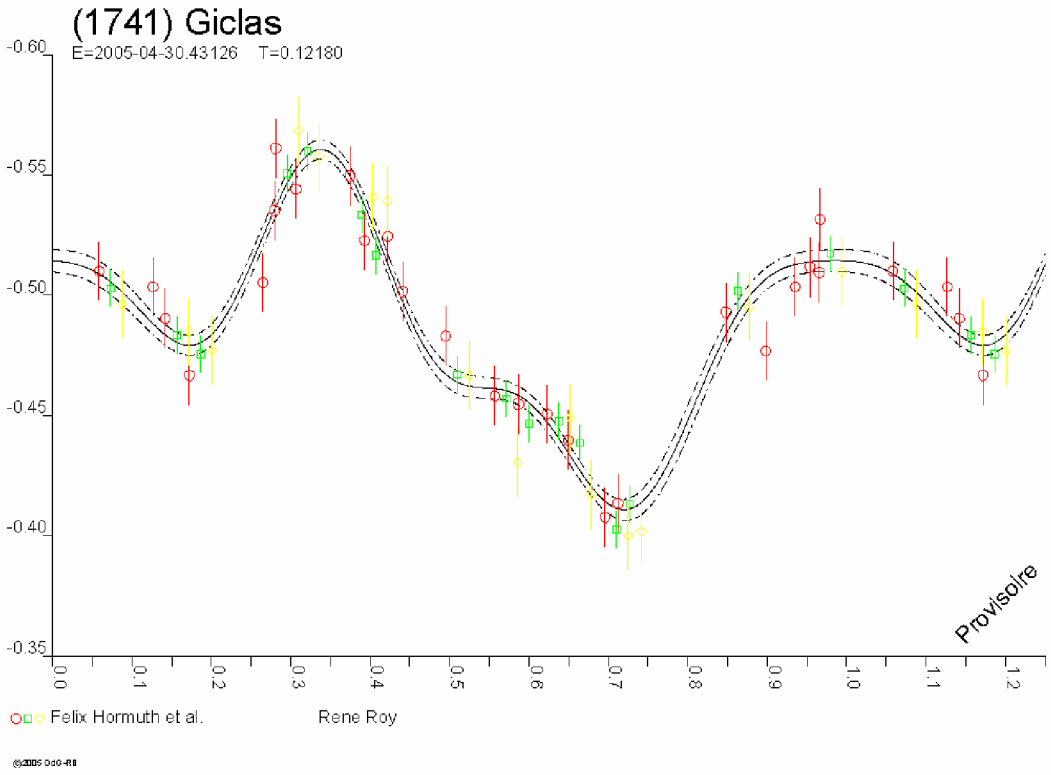
Bisherige Entdeckungen:

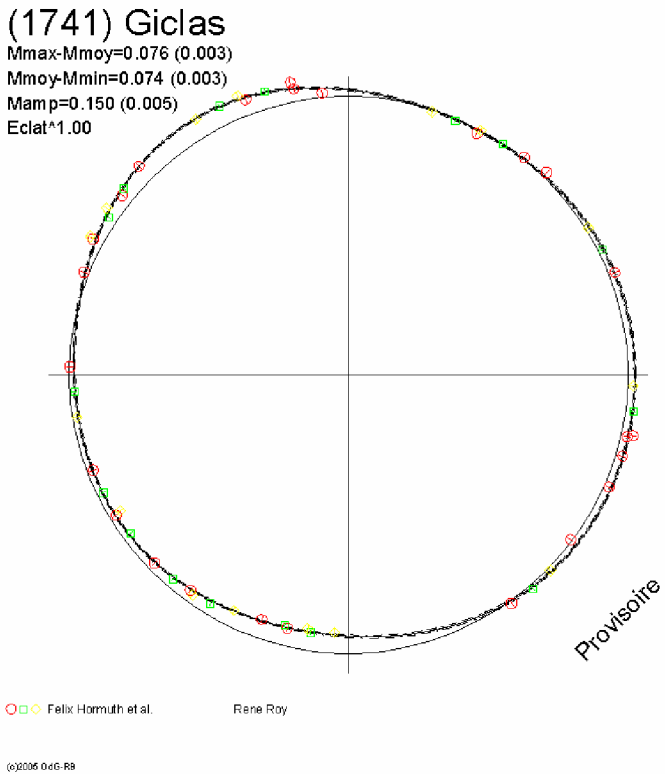
Internal ID	Object	Remarks	Observer / Discoverer
FTN001	**2004 VZ63**	**First object discovered by the FT asteroid project**	**FT asteroid project**
FTN002	**2004 WB10**	**New object with observations from 2001 - 2003 linked to it**	**FT asteroid project and F. Hormuth (at H06)**
FTN004	**2005 HJ4**	**Discovery confirmed by MPC May 6th, 2005**	**FT asteroid project F. Hormuth, L. Kurtze, K. Sonnenberg**

Bisherige Entdeckungen:

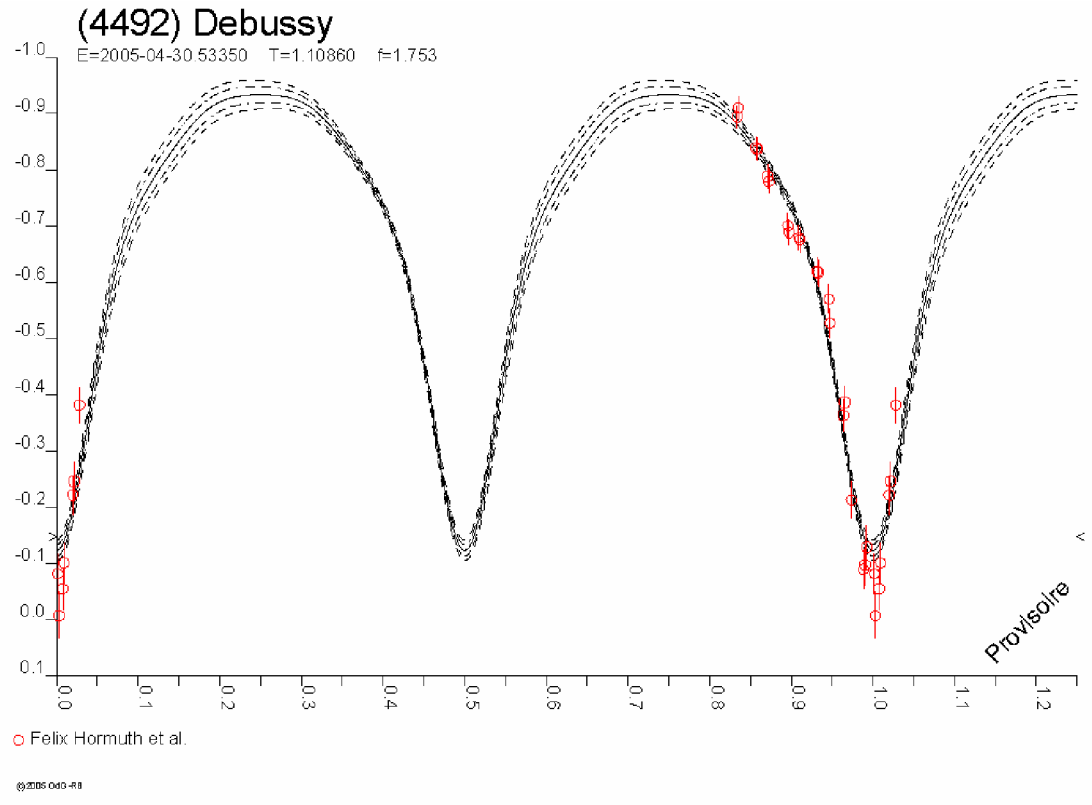


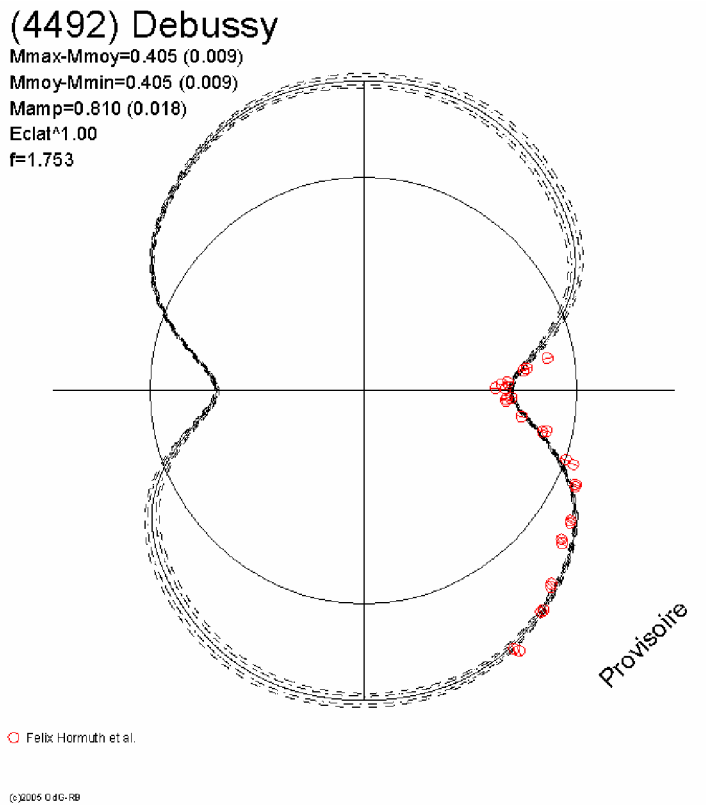
Kleinplaneten Photometrie:





Kleinplaneten Photometrie:



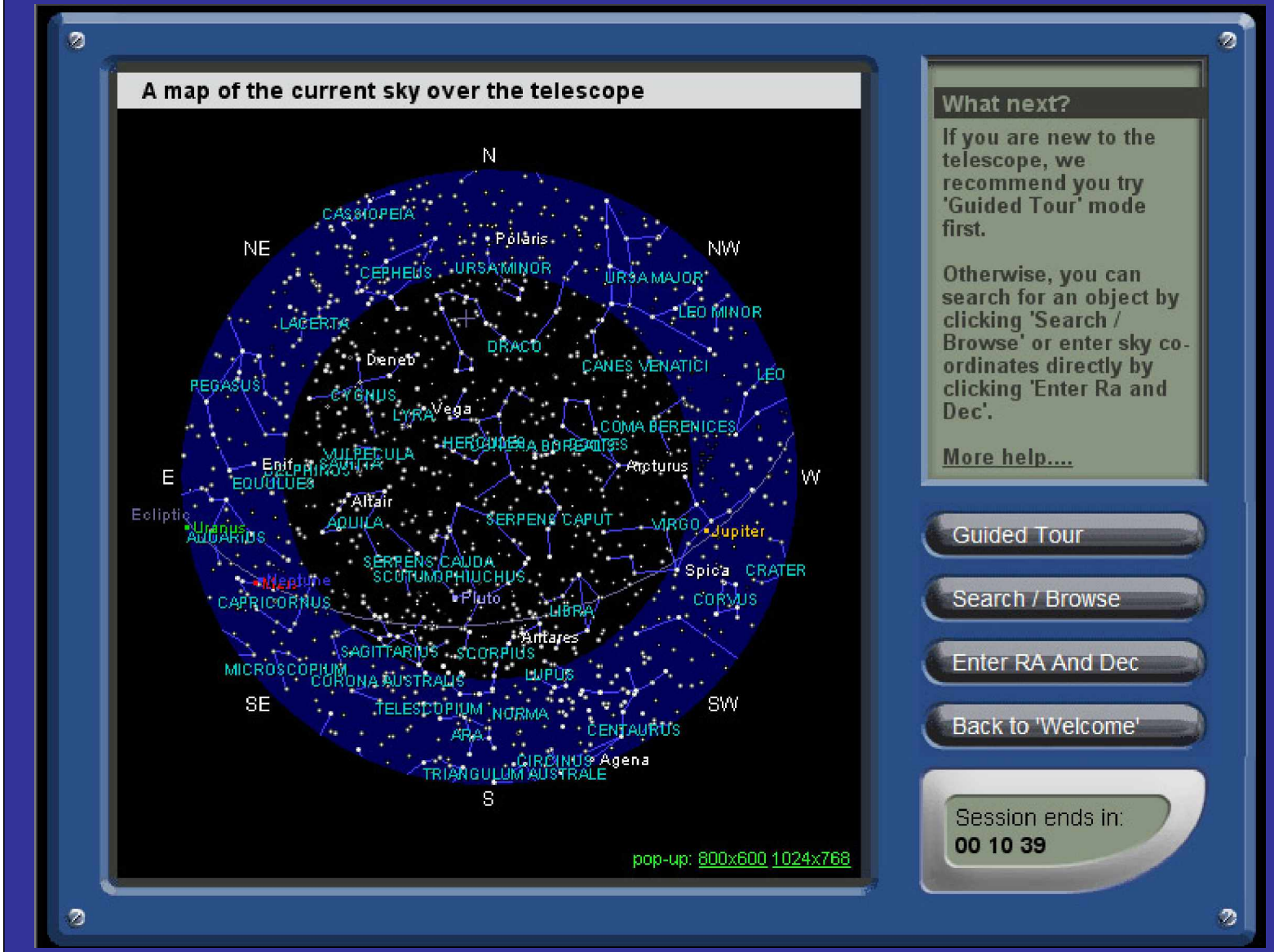


Sternwarte Weinheim

Das Asteroidenprojekt am Faulkes Telescope North

8. Tagung der VdS-Fachgruppe 'Kleine Planeten', Heppenheim 2005

FAULKES TELESCOPE



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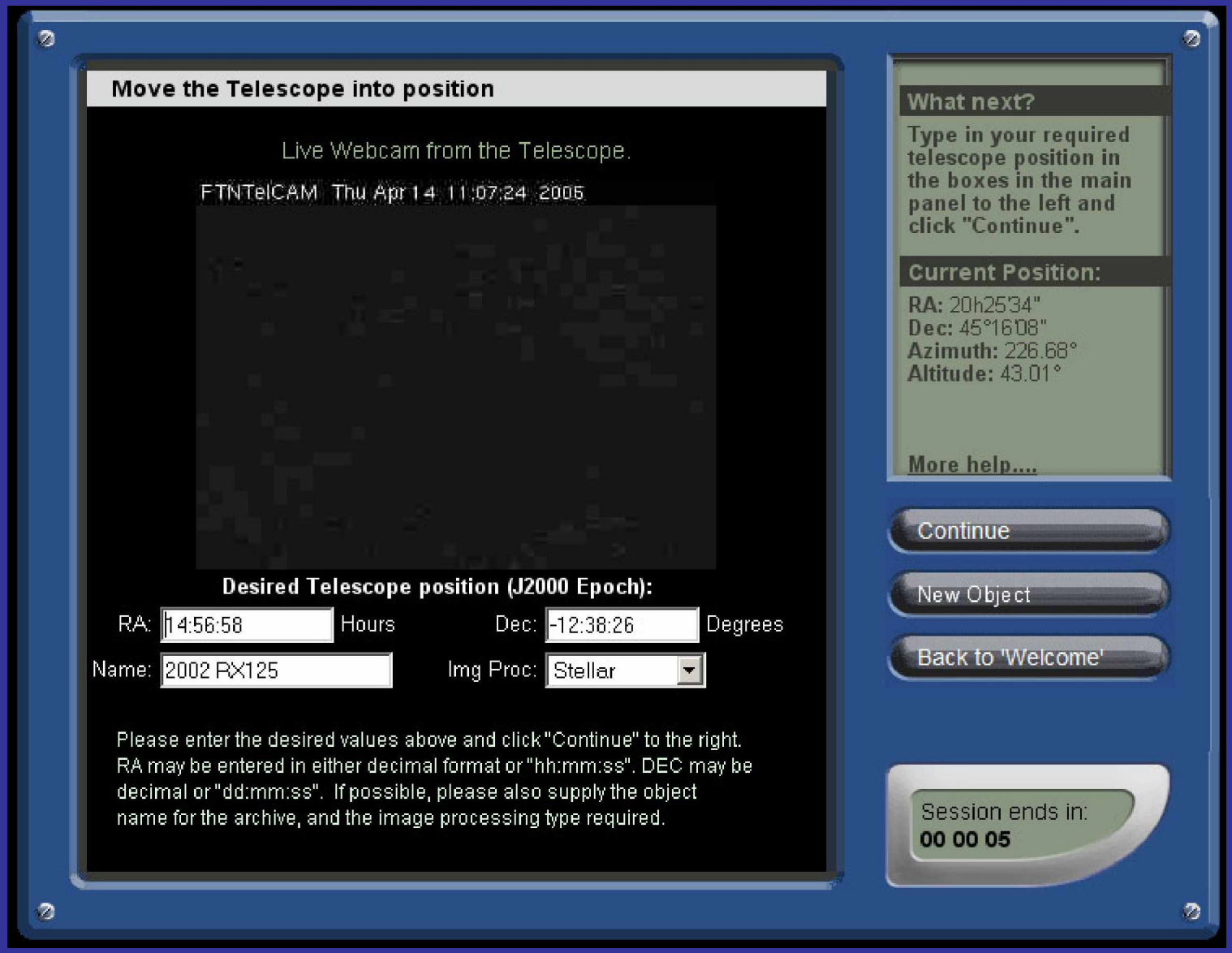
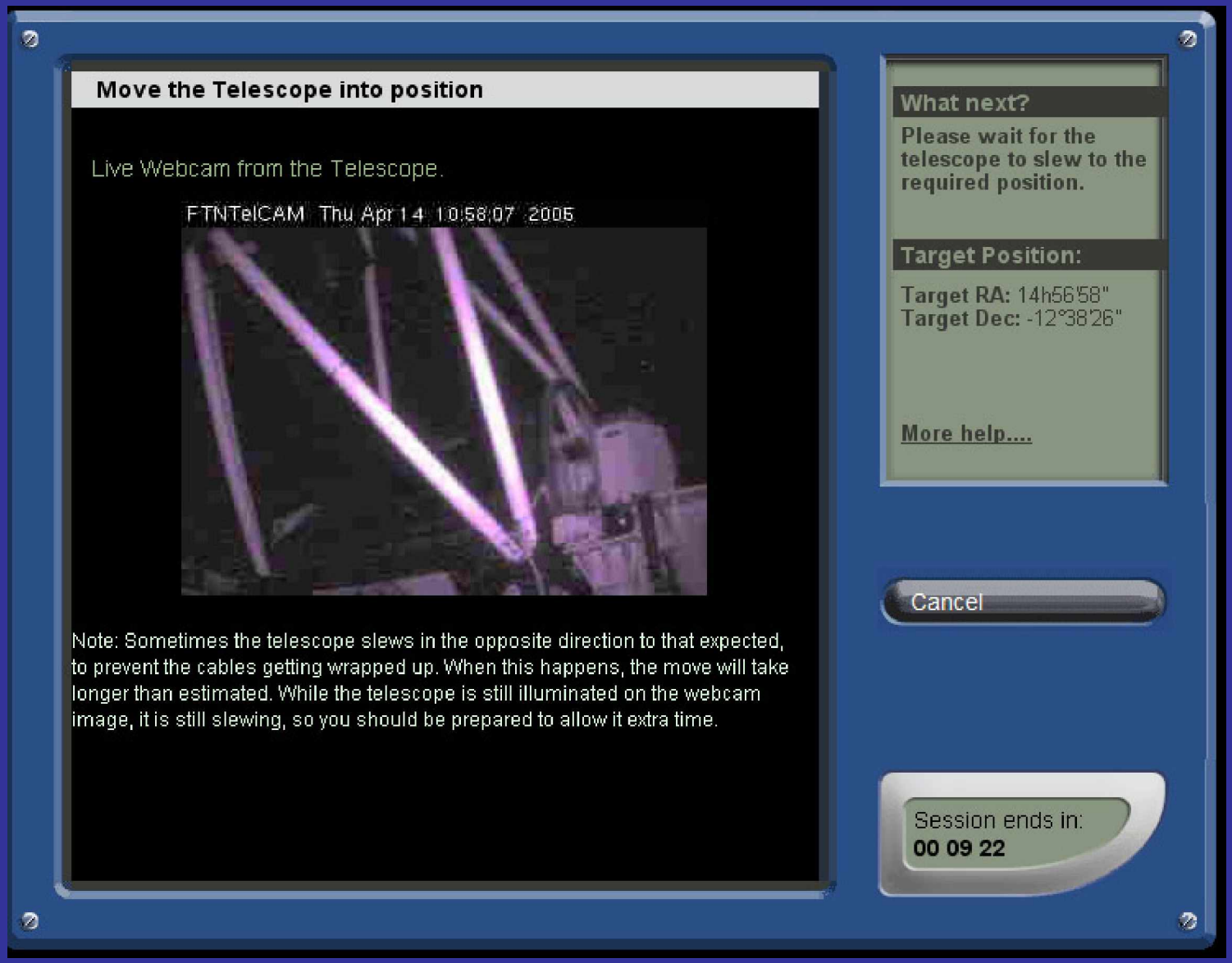
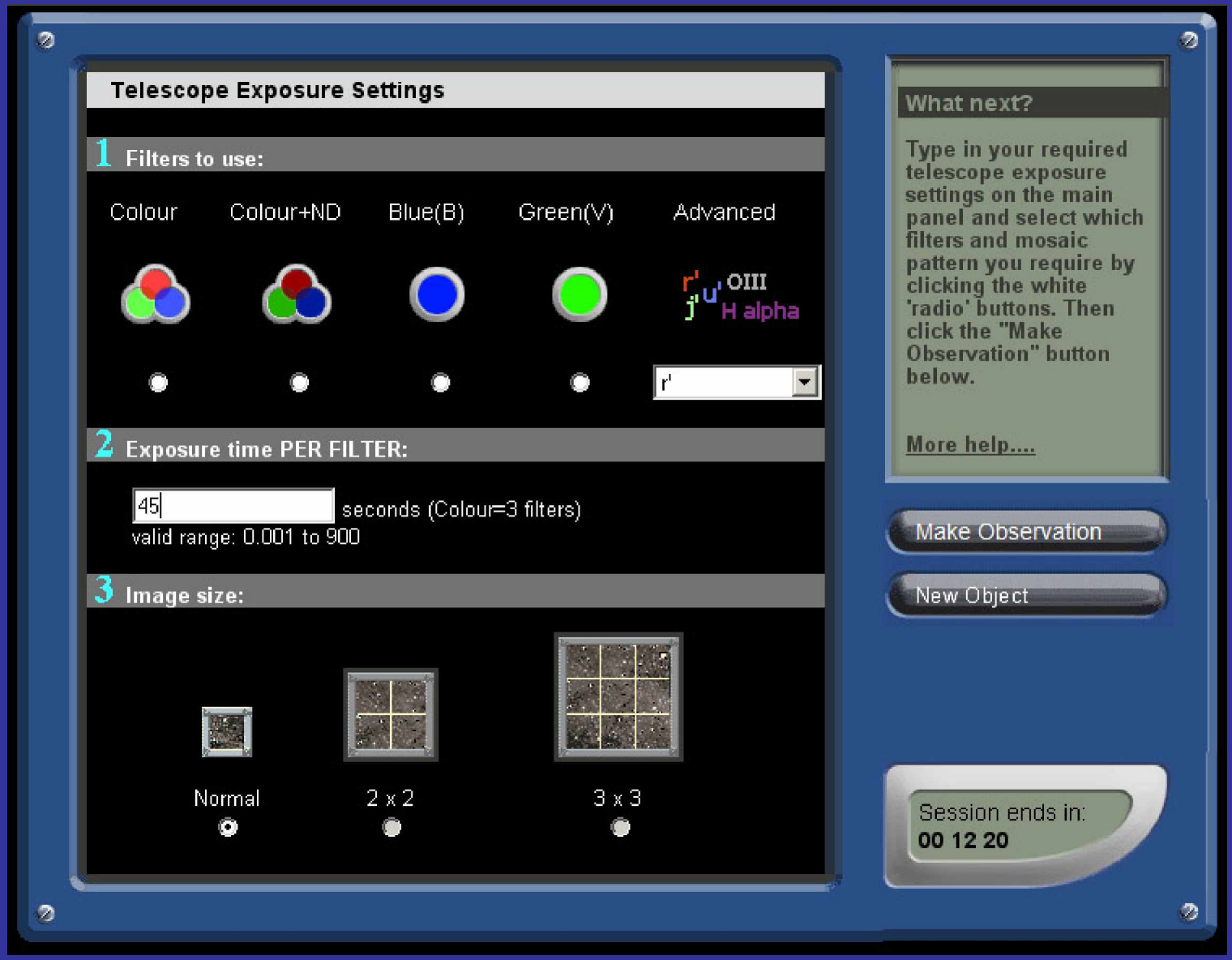
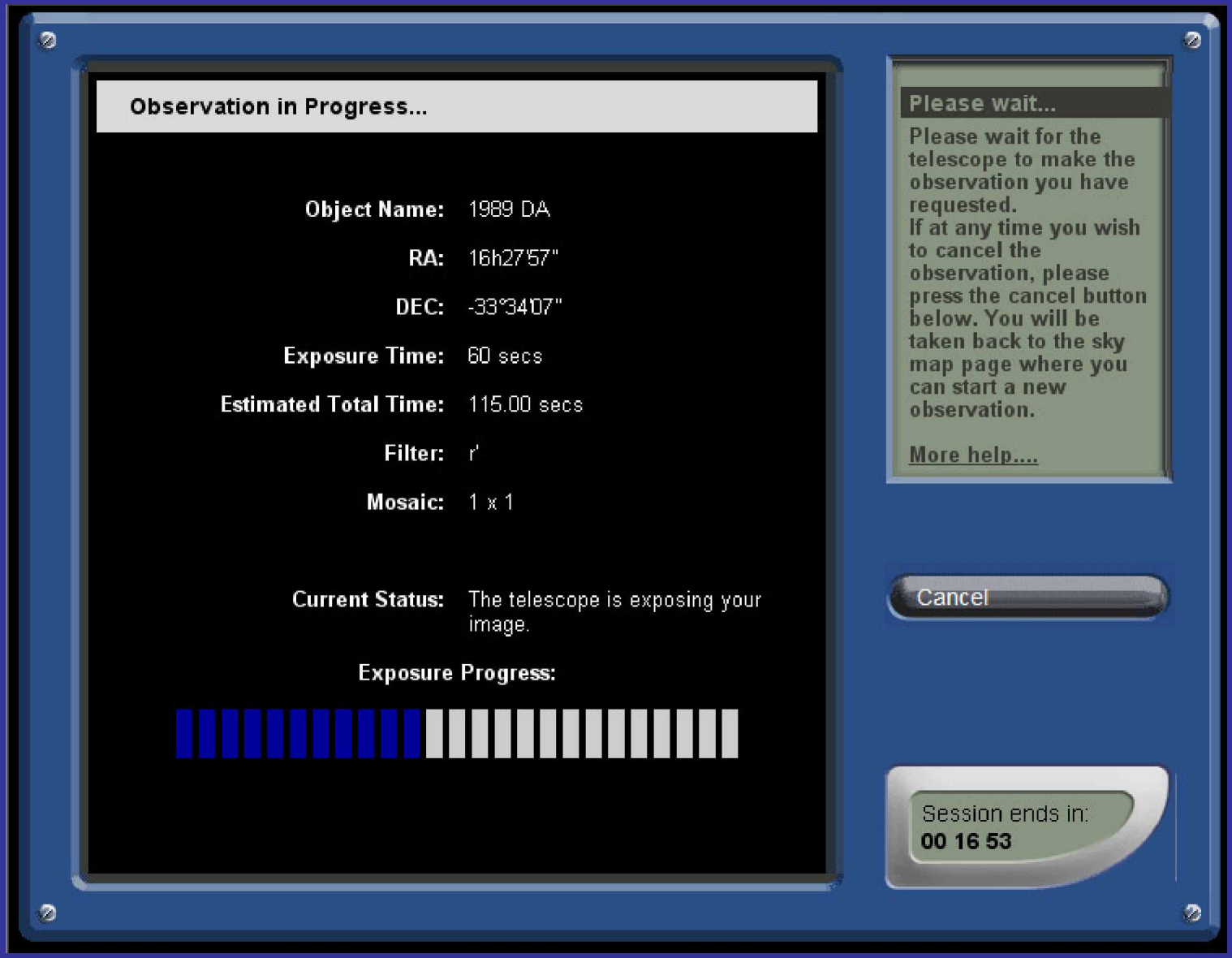
FAULKES TELESCOPE


Move the Telescope into position
Live Webcam from the Telescope.
FTNTelCAM Thu Apr 14 11:07:24 2005
Desired Telescope position (J2000 Epoch):
RA: 14:56:58 Hours
Dec: -12:38:26 Degrees
Name: 2002 RX125
Img Proc: Stellar
Please enter the desired values above and click "Continue" to the right. RA may be entered in either decimal format or "hh:mm:ss". DEC may be decimal or "dd:mm:ss". If possible, please also supply the object name for the archive, and the image processing type required.
What next?
Type in your required telescope position in the boxes in the main panel to the left and click "Continue".
Current Position:
RA: 20h25'34"
Dec: 45°16'08"
Azimuth: 226.68°
Altitude: 43.01°
More help....
Continue
New Object
Back to 'Welcome'
Session ends in:
00 00 05


Move the Telescope into position
Live Webcam from the Telescope.
FTNTelCAM Thu Apr 14 10:58:07 2005
Note: Sometimes the telescope slews in the opposite direction to that expected, to prevent the cables getting wrapped up. When this happens, the move will take longer than estimated. While the telescope is still illuminated on the webcam image, it is still slewing, so you should be prepared to allow it extra time.
What next?
Please wait for the telescope to slew to the required position.
Target Position:
Target RA: 14h56'58"
Target Dec: -12°38'26"
More help....
Cancel
Session ends in:
00 09 22


Telescope Exposure Settings
1 Filters to use:
Colour
Colour+ND
Blue(B)
Green(V)
Advanced
r' u' OIII
j' H alpha
r'
2 Exposure time PER FILTER:
45
seconds (Colour=3 filters)
valid range: 0.001 to 900
3 Image size:
Normal
2 x 2
3 x 3
What next?
Type in your required telescope exposure settings on the main panel and select which filters and mosaic pattern you require by clicking the white 'radio' buttons. Then click the "Make Observation" button below.
More help....
Make Observation
New Object
Session ends in:
00 12 20



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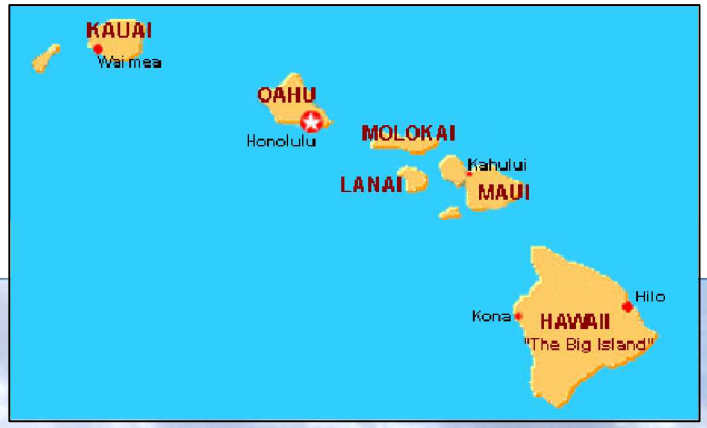
FAULKES TELESCOPE

Der Haleakala:



Der Standort:

Sternwarte Weinheim

Das Asteroidenprojekt am Faulkes Telescope North

8. Tagung der VdS-Fachgruppe 'Kleine Planeten', Heppenheim 2005

FAULKES TELESCOPE

Sternwarte Weinheim

Das Asteroidenprojekt am Faulkes Telescope North

8. Tagung der VdS-Fachgruppe 'Kleine Planeten', Heppenheim 2005

FAULKES TELESCOPE

Haleakala Observatory, Maui

- In 3000m Höhe

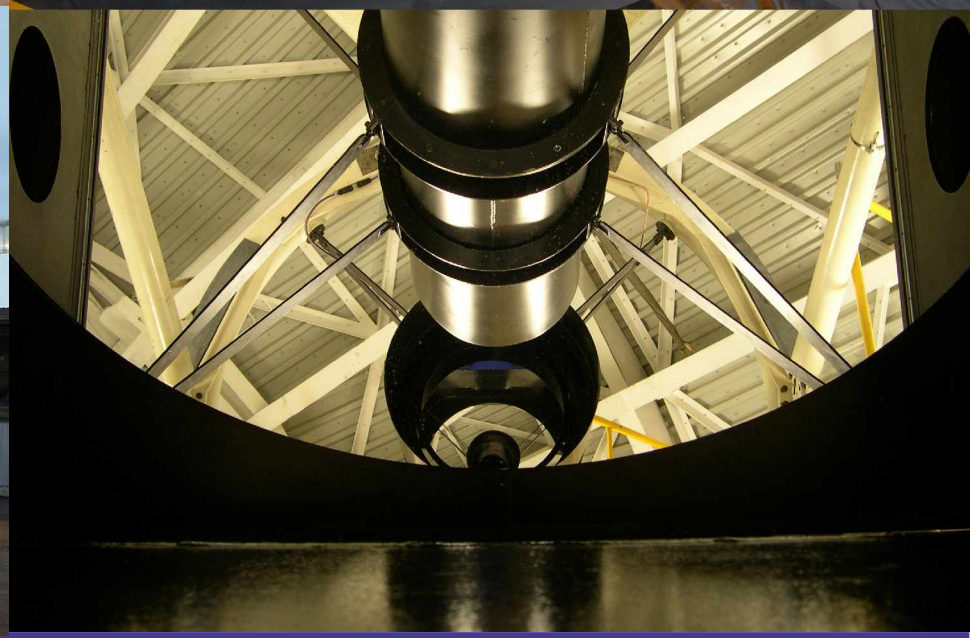
- 70-90% klare Nächte

- Seeing ~1 arc sec

-Zeitverschiebung:
-12 h gegenüber MSEZ

- Glasfaserverbindung

Grundsteinlegung



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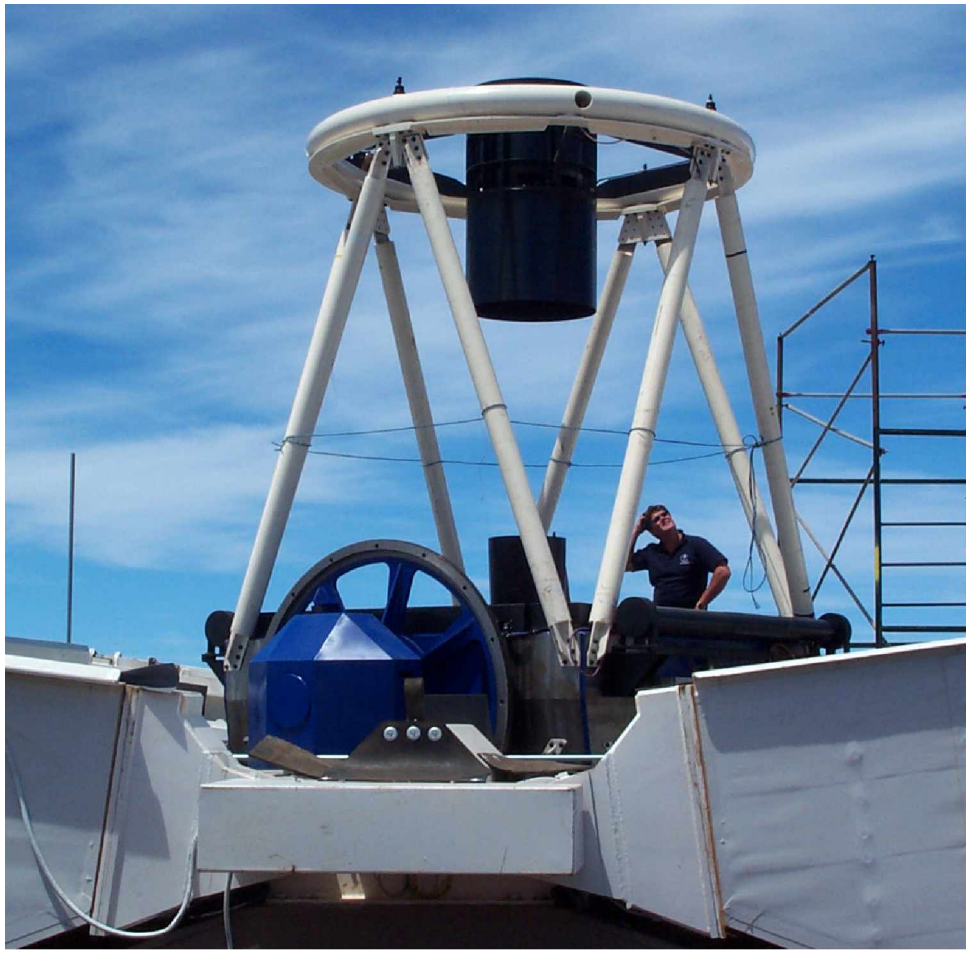
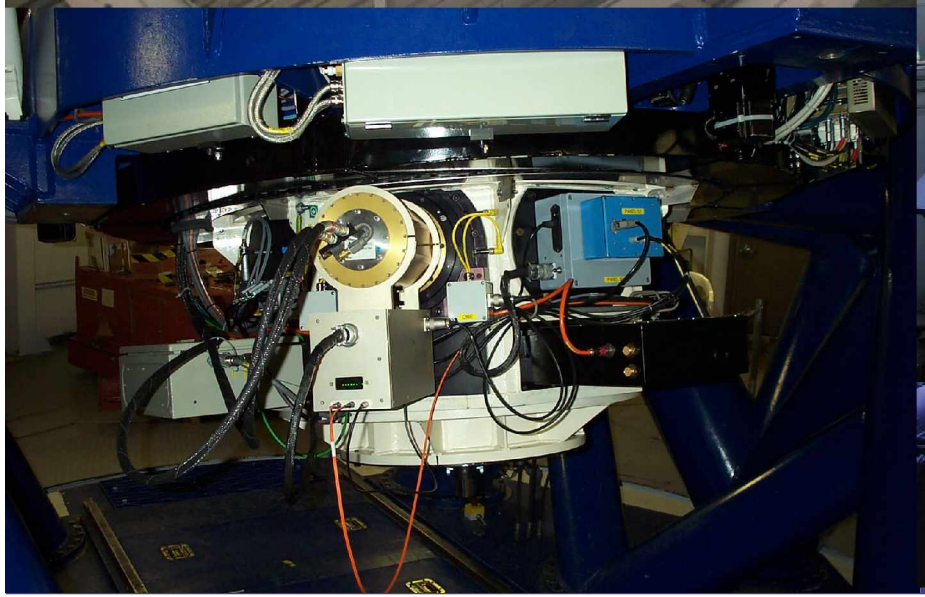
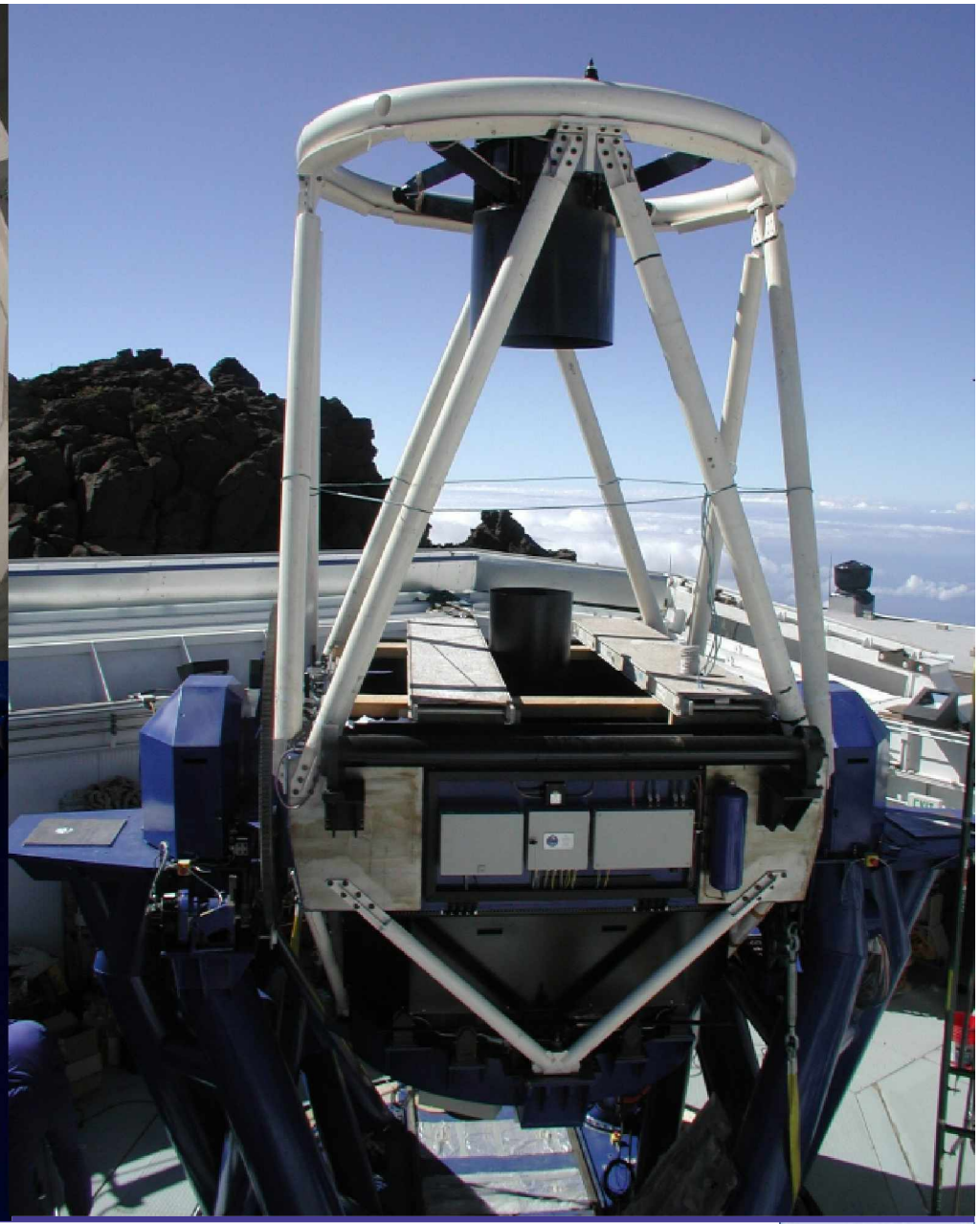


Wartung durch Univ. of Hawaii

Nutzung:
25% Univ. Hawaii; 75% FT, England





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FAULKES TELESCOPE

Topic Area	Current Projects	Possible Target Groups (see below for meaning of codes)				
		KS2	KS3	KS4	Adv	GA
Asteroids and Comets	Imaging Asteroids		●	●	●	●
	Near Earth Object Follow-up Obervations (in preparation)		●	●	●	●
	Asteroid Rotation (in preparation)			●	●	●
Galaxies	Imaging and Classifying Galaxies			●	●	●
	Measuring and Classifying Spiral Galaxies			●	●	●
	Surface Brightness of Galaxies				●	●
Telescopes and Imaging	Colour in Astronomy		●	●	●	●

Topic Area	Future Projects	Possible Target Groups (see below for meaning of codes)				
		KS2	KS3	KS4	Adv	GA
Stars	Planetary Nebulae			●	●	●
	Open Clusters			●	●	●
	Variable Stars				●	●
	Supernovae			●	●	●
	Nova Search			●	●	●
Gamma ray bursts	Optical afterglow after Swift alerts			●	●	●
Extrasolar planets	Light curves of stars with eclipsing planets				●	●

Target Groups

Group	Code used in tables	Who this covers
Key Stage 2	KS2	This group would generally include 7-11 year old students but projects in this group may also be suitable for lower ability Key Stage 3 students.
Key Stage 3	KS3	This group would generally include 11-14 year old students but projects that may be suitable for this group may also be suitable for lower ability Key Stage 4 groups and adult beginners.
Key Stage 4/GCSE Science and Physics	KS4	This group would generally include 14-16 year old students but projects that may be suitable for this group may also be suitable for more able students at Key Stage 3 and as an introduction to related topics in AGCE.
AGCE Physics/ 16-19 age group	Adv	This group would generally include 16-19 year old students such as those taking the English AS and A2 courses making up the Advanced GCE in Physics
GCSE Astronomy	GA	This UK course and examination is offered by Edexcel - www.edexcel.org.uk

Galaxien:

Project	Description	Observations Required	Target Group
Observing and classifying galaxies	Observing and classifying galaxies using Hubble classification	Photometric images of several galaxies taken using BVR filters; contributes to Faulkes Atlas of Nearby Galaxies	KS3, KS4, Adv, Fur, GA, Other
Measuring and classifying spiral galaxies	Observing and classifying spiral galaxies using Hubble classification. Measuring spiral arms	Images of several galaxies taken using BVR filters; forms part of long term collaborative project, also contributes to Faulkes Atlas of Nearby Galaxies	KS4, Adv, Fur, GA, Other
Surface brightness of galaxies	Analysing surface brightness profiles of galaxies and relating to Hubble classification	Photometric images of several galaxies taken using BVR filters; forms part of long term collaborative project, also contributes to Faulkes Atlas of Nearby Galaxies	KS3, KS4, Adv, Fur, GA, Other
Observing interacting galaxies	Observing interacting galaxies	Images of several interacting galaxies taken using BVR filters; contributes to Faulkes Atlas of Interacting Galaxiess	KS3, KS4, Adv, Fur, GA, Other

Zugang für Schulen und Astronomische Vereinigungen

Off-line	**Real-time**
Eingabe über Website (in Vorbereitung)	**“Live” Beobachtung** an FTN oder zukünftig FTS (je 30 Min.)

Kosten (in Deutschland):

- für Schulen: £250

3 x 30 min. live + 10 min. off-line

- für astron. Vereinigungen: £250

2 x 30 min. live + 10 min. off-line

Geplante Beobachtung des „Deep Impact“ mit dem FTN:

- Aufnahme von ca. 2 Bildern pro Minute von Schülern in Hawaii unter professioneller Anleitung

- automatische Bearbeitung und
- schnellstmögliche Bereitstellung der fits-Bilder an 2 ausgewählten Standorten in England

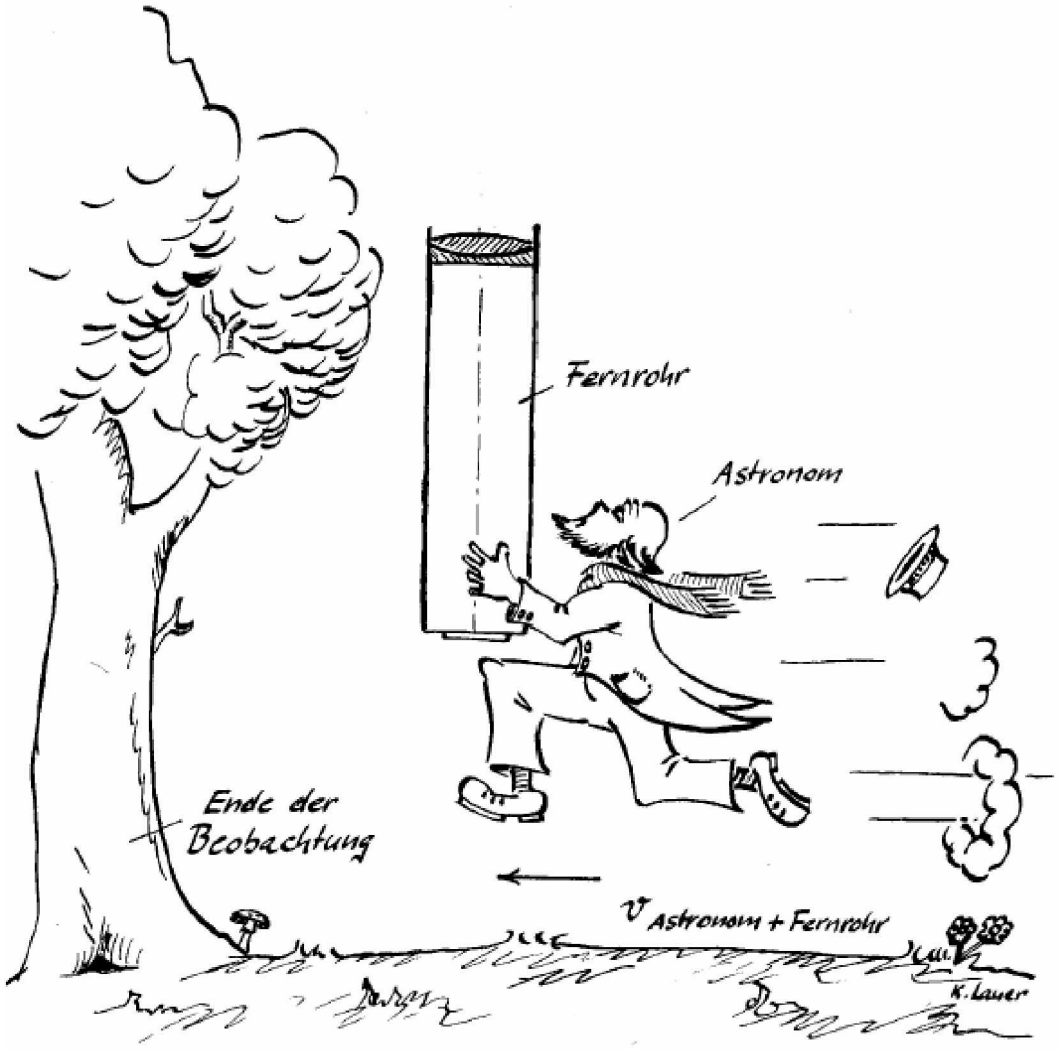
- weitere Analyse von Schülern und Astronomen in England

- Bereitstellung von jpg-Bildern auf der Website von *www.faulkes-telescope.com*

Telescope controlled at 70 mph

?????

Telescope controlled at 70 mph



Telescope controlled at 70 mph

The wonders of 3G

A BRITISH SCIENTIST has been controlling the Faulkes Telescope in Hawaii at 70 mph from a friend's car while travelling on the M60 just outside of Manchester, England. […]

The Faulkes Telescope in Hawaii is fully robotic. There is no human operator on site so it is completely remotely controlled via the Internet. Participants simply have to book an Internet observing session.
The scientist, David Bowdley, explained, "The images that come through from the telescope can be quite large, and the Orange network had no problems in transmitting the data. I was really pleased with the download speeds, and 3G really is comparable to broadband." The Faulkes Telescope Project is funded by millionaire, Dr Martin Faulkes, and is supported by the Department for Education and Skills (DfES) and the Particle Physics and Astronomy Research Council (PPARC) to provide access to research class astronomical telescopes in prime observing locations.

By Tony Dennis: Mittwoch 23 Februar 2005, 14:03
The Inquirer, Liverpool

Vielen Dank für Ihre Aufmerksamkeit!

Lothar Kurtze, Felix Hormuth

Sternwarte Weinheim
Faulkes Telescope Development Partner

Kontakt:

ObsA23@web.de
www.faulkes-telescope.com