

Teaching Astronomy in the University of Granada

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Some history



- University created by Charles V in the XVI century
- (An arabic “Madraza” was created before during the nazarite Kingdom of Granada).
- Jesuits created the Observatorio de Cartuja in 1902. After some time the University started operating it. .
- In 1982, the chair of Astronomy was created

- Departamento de Física Teórica y del Cosmos
- High energy physics
- Astrophysics
- Geophysics

- Teaching Astronomy in all Spanish universities is coordinated by the “Astrophysics and Astronomy Academic Network” (RA3)

Courses

For all students (philosophy, science, medicine...)

- Cosmology and contemporary thinking
- History of Astronomy

First year of Physics

- Introduction to Astrophysics

Last year of Physics

- Stellar Astrophysics
- Galactic Astrophysics
- Cosmology

Master Fisymat

- Master of Physics and Mathematics
- One of its 5 specialities is Astrophysics.
 - Cosmology
 - Advanced Astrophysics
 - High Energy Astrophysics
 - Models of the chemical evolution of the Universe
 - Radioastronomy
 - Comunication of Astrophysics
- There is another Master “ Advanced methods and techniques in physics” with 2 courses: **“Formation and evolution of galaxies”** and **“Spatial teledetection of planetary atmospheres”** eligible for students of Fisymat
- Several researchers from the IAA collaborate in these Masters

University where astronomers have studied:

- Complutense 26.2 %
- Barcelona 25.1 %
- Granada 10.5 %
- Valencia 9.9 %
- Zaragoza 5.2 %
- La Laguna 4.7 %
- Abroad 4.0 %
- Autónoma Madrid 3.1 %
- Sevilla 3.1 %
- ...

- Granada is the third Spanish university (after Madrid and Barcelona) where astronomers have studied.
- Iglesias de Ussel et al. “Sociological profile of astronomers in Spain”, 1998, *Astrophys. Space Sci.* 257, 237.
- Iglesias de Ussel et al, 1996 *Sociología de una profesión: Los astrónomos en España*, Facultad de ciencias políticas y sociología.
- Battaner et al 2001. *Estudio sociológico de los doctores españoles en el campo de la Astronomía*.
- With important research institutions and observatories around Granada (IAA, IRAM, CAHA...) the teaching of Astronomy in the University should be highly developed.
- However...
- ...It is not

Lucas Lara as a lecturer

- Course: “Introduction to Astrophysics”
 - (First year in Physics)
- PETI
 - Observing in the classroom
- A book:
 - Introducción a la Física del Cosmos

PETI

- **PE**queño **T**elescopio del **I**nstituto de **A**strofísica de **A**ndalucía
- Let me use some of his own transparencies presented in the JENAM in Granada

An astronomical observatory in the classroom

Lucas Lara

UGR / IAA

Teresa Gallego

UGR*

Ángel de la Torre

UGR

* Now at the Observatori Astronòmic, Universitat de València

This project is funded by the University of Granada through its

*Vicerrectorado de Planificación, Calidad y Evaluación
Docente*

in close cooperation with the

Instituto de Astrofísica de Andalucía - CSIC



Collaborators:

UGR: E. Battaner, A. Castillo E. Florido, A. Guijarro, J. Jiménez, M.L. Sánchez

IAA: J.L. Ortiz, P. Santos, M. Fernández

The aim of the project is to provide the students at the University of Granada with a real observational device to perform

practical activities

in astronomy,

without logistic complications

related with the transportation and space limitations in telescopic facilities, and all

with low economic cost.

This is what we would like to have...



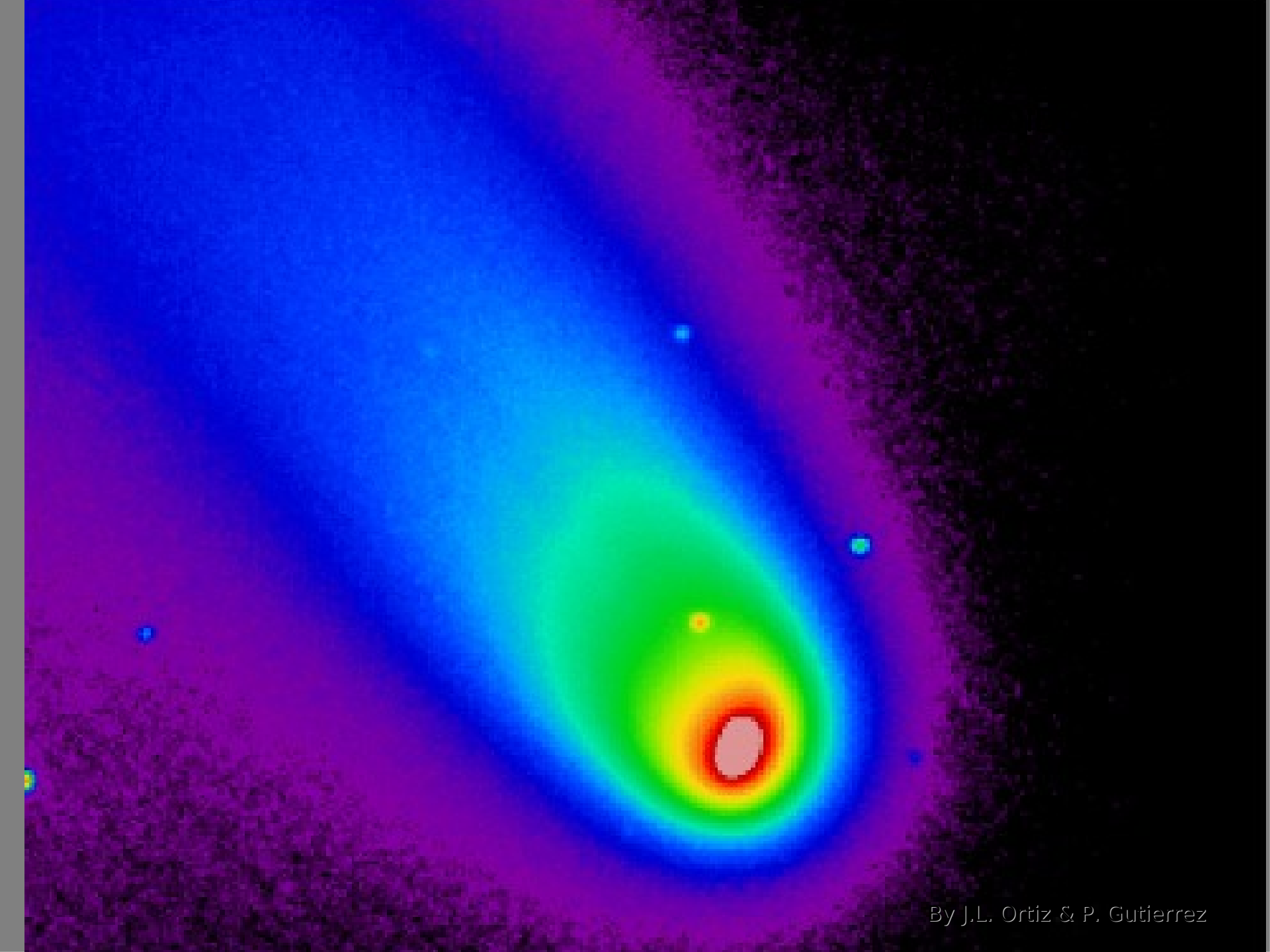
...but it is not always possible!!!

So we move towards more
modest requirements...



- Schmidt-Cassegrain telescope
- Equatorial mount
- 25.6 cm aperture
- Focal relation $f/6.3$
- CCD camera (512x768 pixels)
- Filter wheel
- Johnson filters: U,B,V,I,R
- Remotely controlled
- Located at the IAA main building





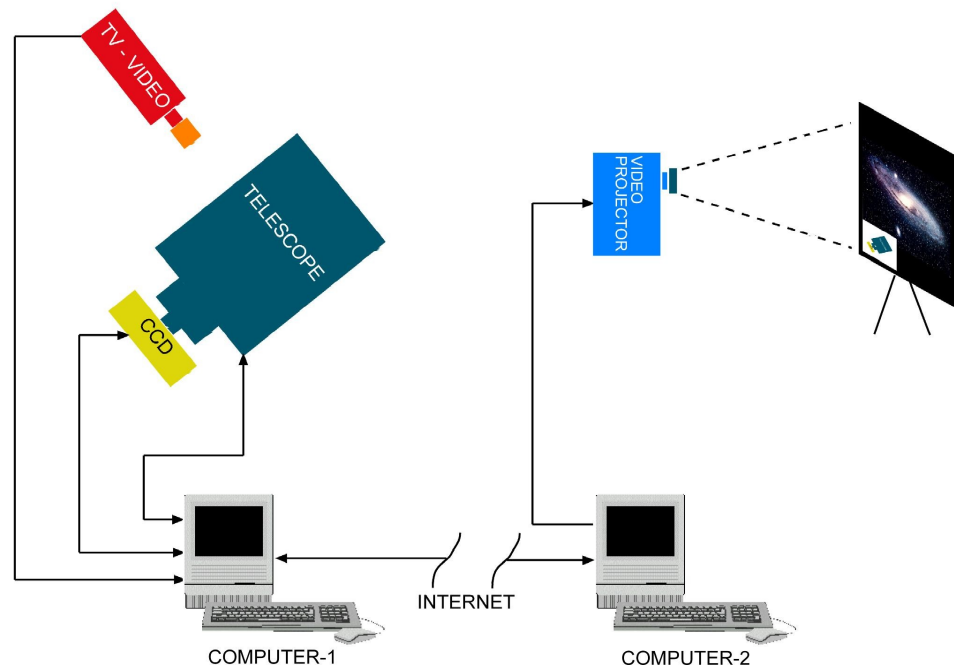
By J.L. Ortiz & P. Gutierrez

And of course, the Venus transit: June. 8th 2004
Internet broadcast



Image from ESO Venus Transit Gallery

Schematic view of remote observations



- Local computer controls the telescope and the CCD
- High sensitivity video camera to show telescope motions.
- Local computer controlled by remote computer.
- Video projector for a wide audience

Software used:

- Microsoft Windows XP
- Remote administrator
- The Sky
- Maxim-DL/CCD
- T-Point

Inicio - Proyecto de Innovación Docente "Un Observatorio Astronómico en el Aula" - Konqueror

Dirección Editar Ver Ir Marcadores Herramientas Preferencias Ventana Ayuda

Dirección: <http://www.ugr.es/~lucas/observatorio/Index.htm>

MandrakeSoft MandrakeStore MandrakeClub Dr.Web - Antivirus Tools MandrakeSoft News Software Programming



Un Observatorio Astronómico en el Aula



Vicerrectorado de Planificación, Calidad y Evaluación Docente
con la colaboración del
Instituto de Astrofísica de Andalucía

Inicio	Prácticas	Enlaces de interés
Proyecto	Material	Contactar
Instrumental	Notas de Prensa	PEqueno Telescopio del IAA

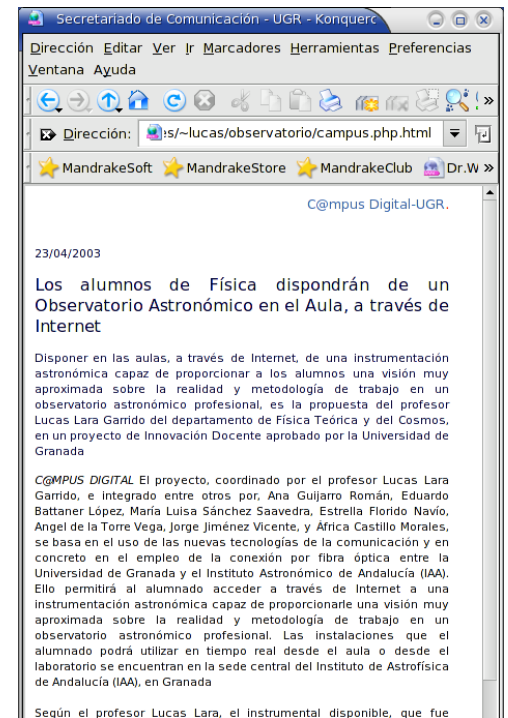
Página creada y mantenida por [A.Teresa Gallego Calvente](#)

Última actualización: [Fri, 19 Mar 2004 12:25:20 GMT](#)

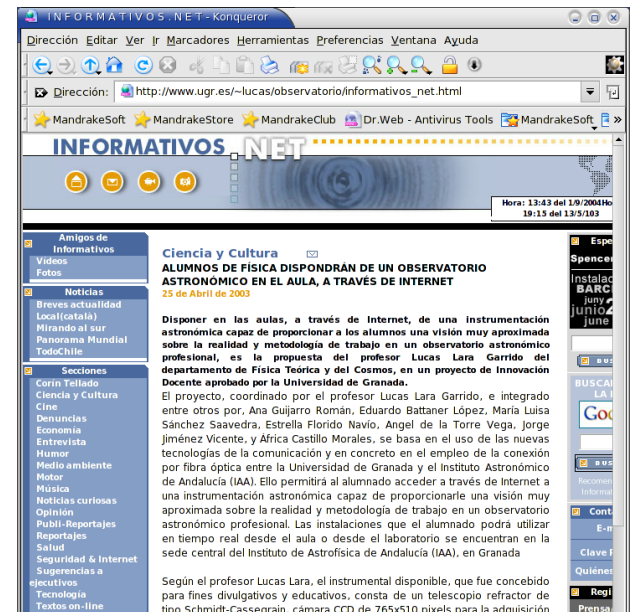
! [SI TIENES PROBLEMAS PARA VER BIEN LA PÁGINA, HAZ CLICK AQUÍ](#)

Son las 12:26:53 horas

<http://www.ugr.es/~lucas/observatorio/Index.htm>



Although modest, this project had quite a wide impact on the media: radio, press and internet.



The book

- Introducción a la Física del Cosmos
- Selected, recommended book in the course “Introducción a la Astrofísica”
- It is a pleasure to inform you that the book will be published by the “Editorial de la Universidad de Granada”

Lucas Lara

- Excellent researcher
- Excellent person
- Excellent lecturer
- imagination, humor, precision, philanthropy, depth, dedication, capacity.
- This is his best legacy.

- To Rosa, Lucas and Pablo