

ELT=European Large Telescope

Realistic goal: ALMA-like world
partnership

Unrealistic goal: our own one

Unacceptable outcome: the third one,
even if ours.....

Ambition: overlap with ALMA+NGST

Reality: we need new money

Consequence: we need a great case!

ELT Science case: goals

- Provide case for support to national agencies and ESO and EU → support
- Case to/from scientists → community support: sine qua non
- Case for design study → technical issues
- Case for eventual partners (US, Japan..) to indicate our community requirements
- NOT (necessarily) OWL

Current context

- Considerable European community goodwill
- [now we're competitive, let's stay that way..]
- Some national support, some reserve
- Minimal ESO support [as yet??!!] (Irp)
- Serious US/Canada activity soon
- European efforts still partially fragmented
- Longer term Japan, China, Central/East Europe (via EU?)
- Beginnings of EU support

Astronomy: current EU status

- Generic top-level EU support (mostly via ESO DG) but not specific: LHC a possible role-model, both good and bad!!
- OPTICON is the optical IR astronomy consortium (also AVOnet, RADIOnet, ...)
- Opticon I3 submitted (750pages, 40Meuroplus40Meuro matched funds)
- Hope for 30% success.....
- Should fund AO developments adequately
- Will fund science case developments

European Status

- Europe still no better integrated than US+Canada in practise...
- Residual tensions between national and ESO projects and priorities (VLT1,ALMA,OWL, VLT-2,PRIMA)
- Limited and uncoordinated resources being invested so far; BUT:
- Single design study agreed for FP6!!!
- We can build a European project!
- If we are promised a reward (an ELT)

International status

- US+Canada recently joined into a single integrated public/private \$70M design study proposal: → SINGLE EFFORT
- Japan will have a `decadal review' soon, from which an ELT will get priority. They want to work with us now.
- Smaller partners all interested, most want to collaborate with us now (Oz,..)
- A compromise single ELT is explicitly presumed by all studies: [Why? \$\$\$\$\$]

EU funding: design study

- First Europe-wide agreement → ELT design study proposal under development
- Deadline: October; funds early/mid 2004.
- **MUST HAVE** community support → this is proven by a science case with wide input!
- Need this actively underway over the summer
- T+S funds are available *now* (Opticon FP5 money)

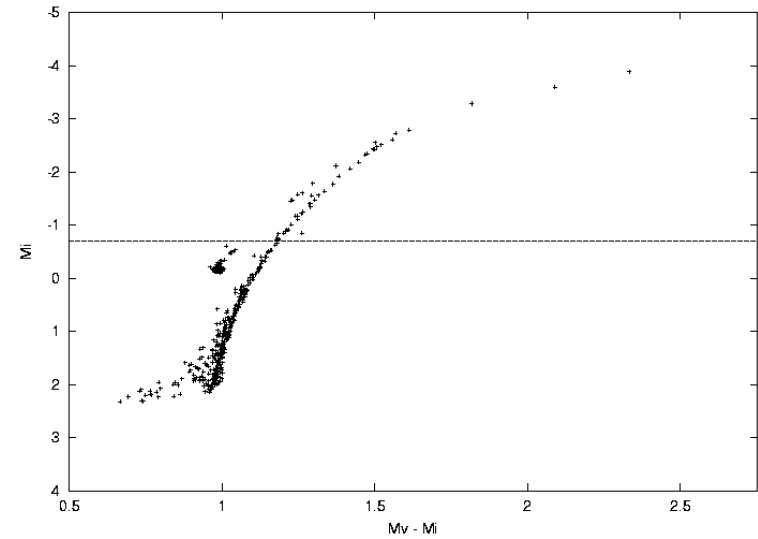
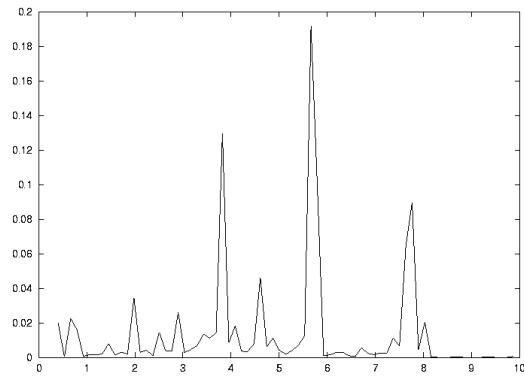
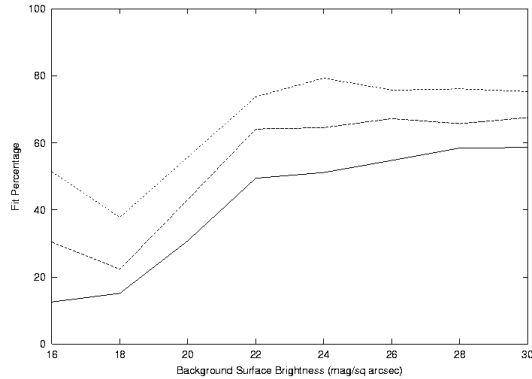
Where are we now?

- ELT Design Study structure exists
- Opticon ELT Science case WG underway
- First draft case available, post Lorentz meeting
- T+S resources available
- Other cases exist to contribute (GSMT, CELT, NGST, ALMA, ..)
- Simulator available?
- A brilliant student project!

Science ambitions: top-level

- Basic ambitions seem clear:
- To see first light: (WMAP \rightarrow $z=20$)
- To see the oldest stars across the Hubble-Toomre sequence: ergo Virgo
- To see planets in/after formation
- To see the Madau relation happen
- Single-dish match to ALMA (SCOWL)?
- But why study just baryons????
- Space-time, DM, and so much more!!

A few detailed simulations exist



What is in it for you?

- Mostly, community contribution for future...
- Mixed with intellectual excitement
- BUT: history of large projects suggests significant national roles will develop, as well as project roles, and project scientists will lead these.
- → `National Champions' for an ELT