



The Impact of ESO on European Astronomy



Alvio Renzini, ESO&50, Garching, September 4, 2012

ESO Impact on European
Astronomy has been **STRONG!!**



The Impact of ESO on European Astronomy

From a mere Southern sky window for five European countries to the world leading observatory

The turning point: 1986 with the approval of the VLT project

From National to Multinational to Planetary

For both infrastructures and science projects

From small to big science

From optical to infrared to mm/sub-mm facilities (and beyond?)



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The ingredients of the success?

- Money (adequate funding, for the capital investment
AND for operations)

- A vision:



Strive for excellence (for the best)

Involve the community

New Operation modes (Service Observing)*

Public Archive*

*some HST genes were engineered in the VLT operations



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VLT Instrument making: ESO, Consortia & GTO

Advantages and disadvantages:

- Focus on the VLT development the human power and know how distributed through member states (First Generation VLT instruments)
- Focus on the VLT development the human power **and** resources (money) distributed through member states (Second Generation VLT instruments)
- GTO allowed large, ambitious projects to be carried out by highly motivated teams
- One peculiar case: HARPS (jointly endorsed by STC & OPC)



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From 2-3 night projects to Large Programmes

From one/few astronomer projects from one local institute to large multinational teams

From one wavelength range to multiwavelength projects

From pure ground to integrated ground/space projects

From “private” to Public Surveys



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“Advanced Data Products”

Back around 1995 the aim was for ESO to cover the whole **End-to-End** process, from Phase I to the delivery to the Archive of pipeline-reduced, science-grade data.

This “dream” proved to be impractical.

The solution: realistically, in most cases only the PI Team of each project can do the final step, and science-grade reduced data are now being delivered by LP and PS teams.

Another synergy between ESO and its community.



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From near stars and galaxies to the edge of the observable Universe

Today ESO science is at the frontier in all crucial areas of astronomical research and leads in several sectors, e.g.:

- exoplanets
- the structure, stellar populations and center of the Galaxy
- galaxy structure and evolution (deep/wide surveys, spatially resolved dynamics of high redshift galaxies)
- GRBs
-
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A Success European Story

(perhaps better than others)

