

Hubble Space Telescope Confirmation (2013-2014) and Mission Extension (2015-2016)

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➤ **Process started in June**

1. Mission Extension Operational Review (ESA internal) June 27

- to assess whether the performance of the spacecraft, payload and ground segment will deliver the science return foreseen for the confirmation interval.

- The Board was pleased to see that 26.8% of the last cycle orbits were allocated to proposals from European Principal Investigators. The capability to deliver the expected science return, particularly by the new WFC3 and COS instruments, in both the confirmation and extension intervals was demonstrated in the presentation.
- The Board did not identify any areas of potentially serious concern, or possible anomaly, during the confirmation and extension intervals. The top life-limiting item appear to be the instruments and it was reported that the probability of having one of WFC3 or COS available at the start of JWST operations in October 2018 is good. It was stated that the intention is to provide a one-year overlap between HST and JWST operations.

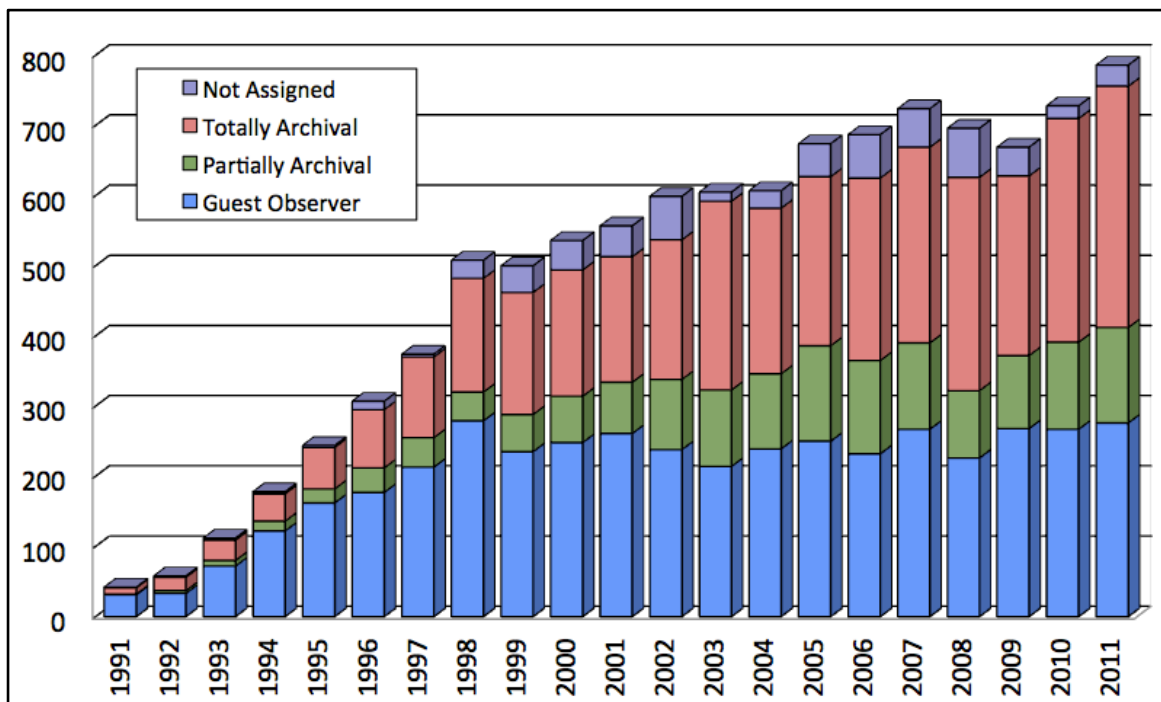
2.Mission Extension Proposal submitted on September 15

3.Presentation to ESA Astronomy Working Group on October 16

- Hubble continues having extraordinary scientific and cultural impact.
- The scientific potential of Hubble is at an all time high after a very successful Servicing Mission 4, with all instruments and subsystems performing nominally.
- **European interest in Hubble is highest ever (26.8% of Cycle 20 allocated orbits)**
- Predicted Hubble lifetime: ~2020.
 - **Goal is to overlap 1 year of operations with JWST.**

HUBBLE - SCIENCE - IMPACT

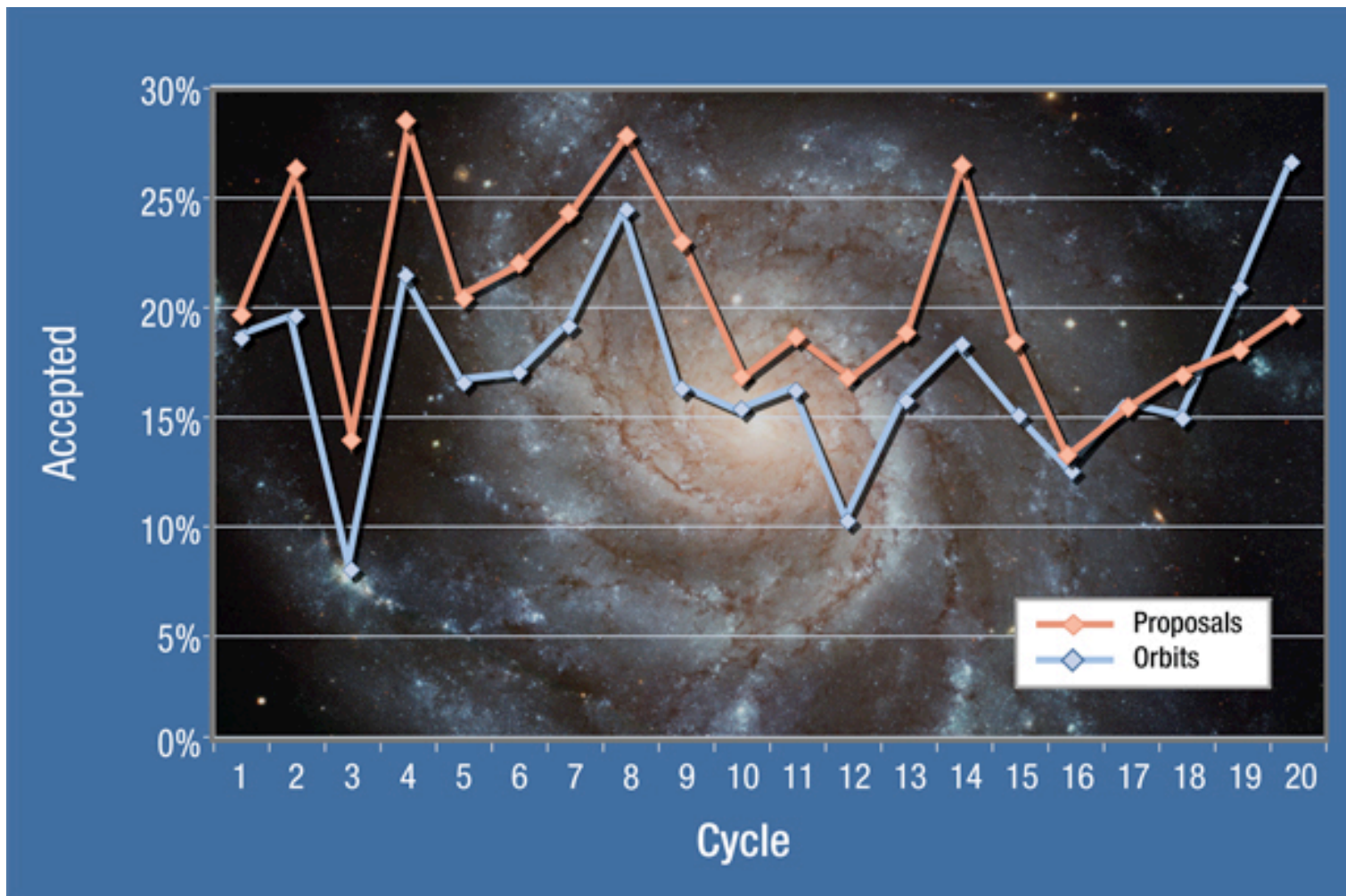
- 10845 published papers to date,
- a community of 5680 astronomers worldwide,
 - of whom 1770 Europeans.



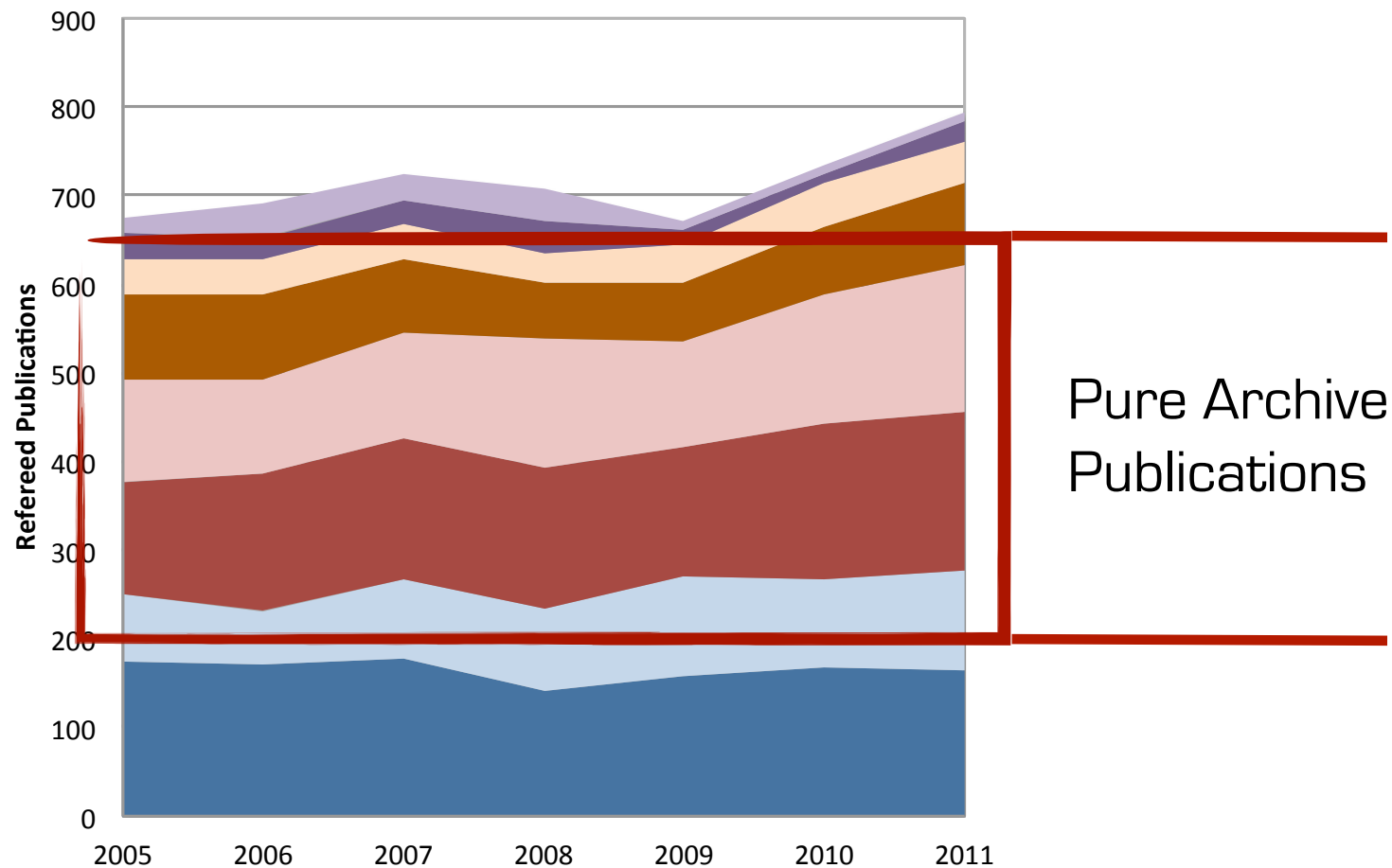
HUBBLE - SCIENCE - EUROPEAN CONTRIBUTION



In Cycle 20, ESA PIs obtained 26.8% of available orbits - **highest ever!**



HUBBLE - SCIENCE - EUROPEAN CONTRIBUTION



~45% of HST Archive publications since 2005 are from ESA First Authors

➤ Operation costs cover:

- 15 personnel deployed at STScI, as per NASA/ESA MOU.
- Technical support of ESA hardware still on the telescope.
- Continuation of European outreach effort.
- Maintenance of Hubble Archive at ESAC.

- We included very strong support letters from:
 - the NASA Associate Director of the Astrophysics Project Division, Mr. Mansoor Ahmed,
 - the Chair of the Space Telescope User Committee, Prof. Lou Strolger,
 - the Chair of the Cycle 20 Time Allocation Committee, Prof. Mario Mateo.

They all enthusiastically support ESA's continued participation in the Hubble program.

WHERE ARE WE now?



- A WG ranked Hubble in the top tier and passed the recommendation to the ESA/SSAC.
- SSAC deliberated that not extending ESA's involvement in Hubble would cause irreparable scientific damage.
- The next and final step is the assessment by the Science Programme Committee (SPC) - November 15-16.
- Concern: ministerial on November 20-21. Will decide ESA's budget for the next 5 yrs.