Technology sub-committee overview

Credit: NASA: Goddard Space Flight Center

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Science Interest Group 2
Today

- A flagship mission – what can we do?
- MgF$_2$ coatings on Al for the mirrors
- For the UV – MCP based detector
- Echelle would use a mechanically ruled grating (like STIS)
- UV/Vis CCD cameras (might be a dichroic split with optimized coatings/CCDs) – like WF3
- NIR would use Hawaii IR FPAs
- Bandpass (0.115 to 1.8 microns)
A testament to serviceability

• That 25 years after Hubble launched, we don’t have an immediate better option available in terms of efficiency

• On the other hand, COS and WF3 were selected in 1997

• Why haven’t we moved much further in almost 20 years?
What is possible?

• Where are the revolutions possible?
  – Coatings? Bluer bandpasses without compromising VIS/NIR?
  – Multi-object spectroscopy
    • In the UV, direct multiplexing increases efficiency
    • Need to know distribution of sources on the sky
  – High data rate communications
    • Gigapixel cameras should be observing as much as possible to use their capability – Ka band from L2 will be limited
Crucial for exo-planets

- Stability
- Stability
- Stability
- Coatings
Goals for the technology subcommittee

• What are the most crucial technologies to improve?
• What is a reasonable amount to spend to improve them?
• What is the most cost effective improvement available?
• Is there a community consensus on the best use of funding to improve the technology?