SIG2 Recommendations to the COPAG on the Question of a UV-visible Flagship

A Reminder of the Charge…

- Each PAG is charged with reviewing the set of 4 Flagship concepts and suggesting additions, subtractions and other useful commentary.
- Each PAG will consider what mission studies should be studied to advance astrophysics as a whole.
- Each PAG should not consider that any one mission concept "belongs" to them.
- Where there is existing analysis PAGs are encouraged to comment on the cost range anticipated.
- Next steps:
  - Identify a small set of candidate large mission concepts
  - Form community-based STDTs
  - Conduct studies
  - Identify Technology Requirements – enable funding through technology programs
  - Deliver results to 2020 Decadal Survey committee

How this can be read…

- All that is being solicited is a simple thumbs up or down
- Or…
- PAGs are being asked to strategically evaluate what their favorite flavor of Flagship would mean to their field, and how much it might cost

Some suggestions…

- We could…
  - Collect a compelling set of science cases that could only be done by a UV-visible Flagship and make the case for such a mission (a lot of white papers have already been submitted to this effect)
  - We could identify the kinds of measurements and therefore technologies that would be needed to enable such science (this is likely doing the STDT's job for them)
  - Evaluate where necessary technologies stand and where investment is needed over the next 5-10 years

Some suggestions…

- Alternatively, we could…
  - Critically assess the AURA report (officially released July 6, 2015) and determine if their astrophysics science portfolio is complete, and augment as necessary
  - Solicit community reaction to the report and determine if it enjoys the level of support that would equate to community endorsement, and then voice that support explicitly in the recommendation

Some suggestions…

- Alternatively, we could…
  - Realise that no Flagship mission is going to be successful without broad appeal and support
  - Evaluate how the broad capabilities listed in the AURA report would benefit astrophysics
  - Evaluate whether the combination of increased cost and risk from the mirror figure requirements combined with the increased cost and risk of UV throughput is acceptable

Some suggestions…

- Looking away from just the UVOIR Surveyor…
  - Does the HabEx concept represent an acceptable astrophysics vehicle?
  - Do we believe that it is actually a cheaper option than LUVOIR with a 4m monolith mirror?
  - Do we believe that a 4m mission can locate 1-3 ExoEarths without gobbling up most of the available on-sky science time?
  - Is this a mission we can similarly endorse or are the risks too great?
  - Is there next-generation astrophysics that can be done with a UV-visible 4m-class mission?