



Constellation-X

Design Reference Mission

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May 1, 2002



What is the DRM?

- **A set of hypothetical observing proposals to define the core science program for Constellation-X:**
 - **Developed by the Con-X FST and mission team.**
 - **Representative of the types of science that would be done with the mission**
 - **DRM proposals are NOT placeholders for real observations and do not give proposers “rights” to observations nor data.**



DRM Utility

- **DRM guides telescope, instrument and spacecraft design**
 - **Use of one consistent set of observing plans to evaluate design alternatives**
 - **Allows for systems architecture trades that yield an optimized design in a way that is complementary to a traditional requirements flow down**

Trades can be assessed by directly determining the impact on science, eg: slew rate capability vs. momentum storage

Allows trades across mission parameters that are traditionally difficult to asses, eg: re-charge of ADR system vs duration of observations

Mission (s/c, instrument, ground segment) requirements can be refined, eg. timing resolution required.



DRM Updates

- **The DRM will be continually updated**
 - **Include more detail in observing requirements to support more complex systems engineering and observing scenarios**
 - **Remove (parts of) programs that are no longer of astronomical interest**
 - **Revise programs based on feasibility within the current design**
 - **Remove (parts of) programs that are no longer feasible within the latest design**
 - **Add (parts of) programs that become feasible under a new design**



Using the CXM DRM

- **Constellation-X team will translate each DRM proposal into parameters to feed into the mission simulator**
parameters include sky distribution, brightness, # of visits, etc.
- **Resources for preparing proposals for the DRM will include:**
 - exposure time calculator?
 - SNR calculator?
 - Your feedback is encouraged!
- **DRM proposals are evaluated by the team for problems:**
 - Assessment for implementation problems
 - Practicality



DRM Schedule

- **First draft of DRM proposal form is out to the IPT Leads. Comments due back mid-May**
- **Second draft out to IPT leads, industry, and the FST end of May**
- **DRM proposal form out to community early June**
- **DRM proposals due back mid-July**
- **First DRM prepared by the September FST meeting**