



WFIRST History

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WFIRST History



- The EOS panel of the Astro 2010 Decadal Survey created WFIRST by combining the science proposed by several similar hardware concepts (i.e.; JDEM-Omega, MPF, and NIRSS, all wide field, near-infrared telescopes) to produce a broadly capable mission.
- NASA HQ formed a Science Definition team in late 2010 to perform a two year study to develop a Design Reference Mission (DRM) responsive to the NWNH report.
- An Interim DRM report was delivered in Summer 2011
- In Dec 2011, the charter was modified to request a DRM that was non-duplicative of other ground and space assets and attempted to further reduce the mission cost

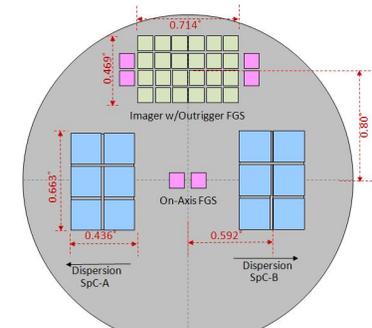
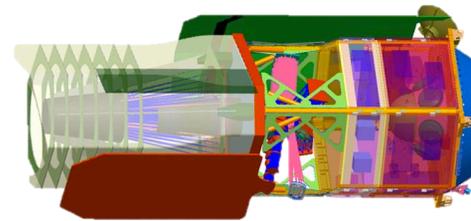


WFIRST DRM Progression



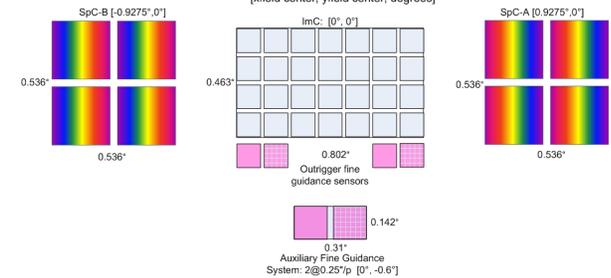
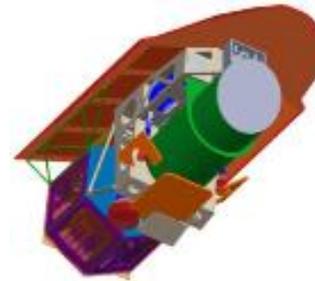
JDEM Omega

- 1.5 m obstructed telescope
- 3-channel payload-H2RG's
- 5 year mission
- Atlas V launch vehicle



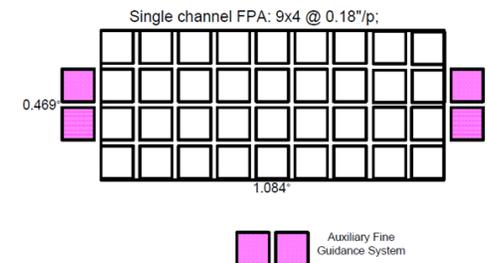
IDRM

- 1.3 m unobstructed telescope
- 3-channel payload-H2RG's
- 5 year mission
- Atlas V launch vehicle



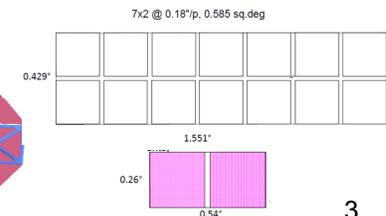
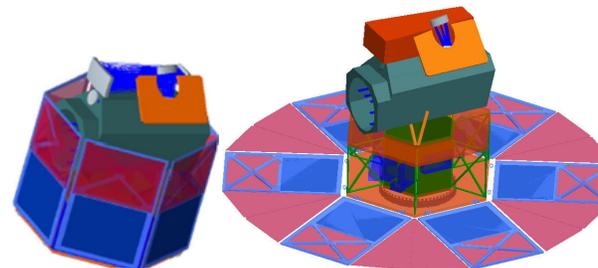
DRM 1

- 1.3 m unobstructed telescope
- Single channel payload-H2RG's
- 5 year mission
- Atlas V launch vehicle



DRM 2

- 1.1 m unobstructed telescope
- Single channel payload-H4RG's
- 3 year mission
- Falcon 9 launch vehicle





WFIRST Costing History



Version	Primary Mirror Diameter (m)	Obstructed Telescope	Red Limit (μm)	Science Focal Planes	Science Detectors	Pixel Count (Mpix)	CATE date	Project Est.	Aero 70% Est. (CATE)	% Diff
JDEM-Omega	1.5	Yes	2.0	3	36 H2RG	151	2010	\$1.21 B FY09\$	\$1.61 B FY09\$	33% unreconciled
WFIRST-IDRM	1.3	No	2.0	3	36 H2RG	151	2011	\$1.63 B FY12\$	\$1.76 B FY12\$	8%
WFIRST-DRM1	1.3	No	2.4	1	36 H2RG	151	N/A	<\$1.6 B FY12\$	N/A	N/A
WFIRST-DRM2	1.1	No	2.4	1	14 H4RG	235	2012	\$945 M FY12\$	\$1.1 B FY12\$	16%