

# WFIRST STATUS IN CANADA

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# WFIRST STUDIES IN CANADA

After receiving input in the form of RFI in May 2014, CSA issued an RFP for two analysis studies: one for WFI, and one for Coronagraph.

Studies will examine technology, costs and science for different options.

WFI: COM DEV

Coronagraph: ABB Canada

# CORONOGRAPH

## Category 2: Contributions to the Coronagraph Instrument

EMCCD	To provide EMCCD cameras or control electronics for the coronagraph imaging and spectroscopic channels.
Integral Field Spectrograph (IFS)	To provide the full IFS arm (lenslet-based) or key optical sub-components.
Other optical sub-systems	To provide other optical elements such as deformable mirrors, flip mirror, fine-steering mirror.
Image processing	To provide speckle suppression algorithms needed to achieve contrast goals of the coronagraph instrument.
Data processing and archiving (also applicable to Category 1)	To provide data simulations tools (instruments, surveys) and develop and provide an infrastructure for the processing, archiving and distribution of WFIRST data.

# WFI

## Category 1: Contributions to the Wide-Field Instrument

Integral Field Unit (IFU)	To provide the full IFU channel or a sub-system of the IFU (image slicer, optical relay, detector (H2RG 2048x2048, 18 microns pixels)).
Photometric calibration	To provide pre-flight ground photometric stability testing of the main focal plane pixels and IFU, and provide flight calibration instruments for these components.
Fine Guidance System	To provide a fine guidance system that will support focal plane guiding during wide-field and IFU observations and other observing modes (including coronagraphy) as needed by the mission and a dedicated guiding images processor.
Data processing and archiving (also applicable to Category 2)	To provide data simulations tools (instruments, surveys) and develop and provide an infrastructure for the processing, archiving and distribution of WFIRST data.

# WFIRST STUDIES IN CANADA

- Two-phase.
  - Halfway through a smaller number of options will be selected for more detailed study.
  - Due date of final report: approx 6 months
- Strong response from the Canadian astronomical community to participate in these studies: ~20+ individuals responded to the RFI
- Canadian Long Range Plan Mid-Term Review final report due Fall 2015



# EXTRA SLIDES

# WFI PARTICIPANTS

- Dae-Sik Moon (U Toronto)

- Wide Integral Field Infrared Spectrograph (WIFIS)

that I have been developing in my lab. It is based on an image slicer, as WFIRST.

- Near Infrared Echelle Spectrograph for the Keck II telescope (commission 2015 Jan) in collaboration with Caltech
- Microshutter Array-based Multi-object Infrared Spectrograph (PI, just started) in collaboration with NASA/GAFA
- TMT Science Calibration System for Adaptive Optics and Infrared Instruments (PI)
- Polarization Grating-based Visible-Infrared Spectrograph (PI).

- Justin Albert (U Victoria)

- ALTAIR - Calibration

- CADAC

- Data Archiving