Johns Hopkins' interest in joining PFS

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Johns Hopkins & PFS

The department of Physics and Astronomy is very interested in joining the PFS project:

(1) We feel that we are an excellent match in terms of our scientific interests, technical expertise, and resources.

(2) We see the PFS project as an exciting opportunity to build on our strong foundation and be a part of one of the best of the next-generation of large surveys.

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Johns Hopkins is prepared to provide an in-kind contribution of $5M during the design, construction, and commissioning phases of PFS.

At this point, the precise nature of this contribution is flexible.

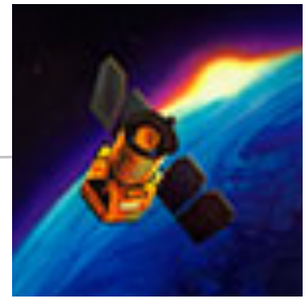
We are especially interested in participating in the development of the spectrographs in general and the NIR channel in particular.

Johns Hopkins and large sky surveys

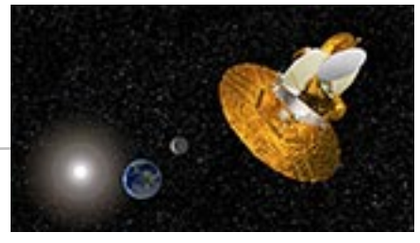
Over the past decade we have been involved in many of the most ambitious and successful large surveys, including

- SDSS I, II & III

- GALEX



- WMAP

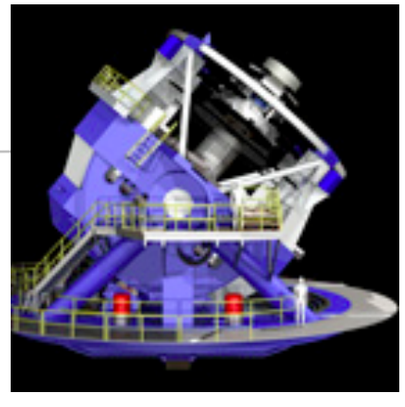


- RAVE (RAdial Velocity Experiment)

- Pan-STARRS

- the Atacama Cosmology Telescope

- LSST



JOHNS HOPKINS UNIVERSITY

IDG

Instrument Development Group

World Class Instrumentation for the Sciences

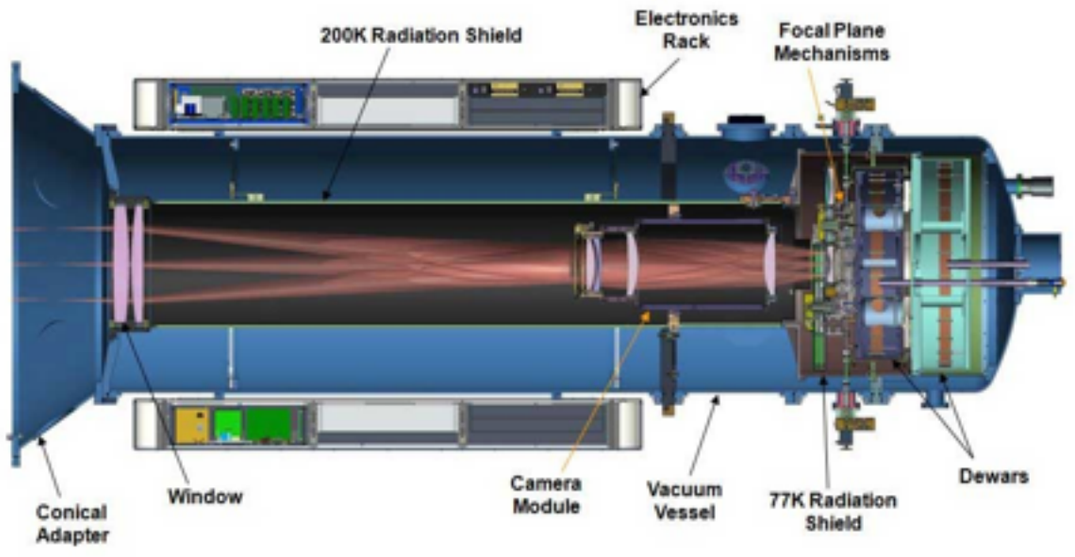
(led by Steve Smee)

The group offers engineering services with core competence in: analysis, electronics design, mechanical engineering and design, optomechanics, optical system design, and software development.

The IDG engineers:

- designed and built the original SDSS spectrographs
- were responsible for the upgrades to the SDSS III spectrographs
- played significant roles in the Magellan FourStar wide-field NIR camera, the WIYN NIR high-resolution camera, and the SDSS Apogee NIR spectrograph.

the FourStar NIR camera



The IDG has a long and fruitful history of collaboration with Jim Gunn and Mike Carr at Princeton, and we would expect this partnership to continue in the PFS project.

Astronomical project management

JHU has a wealth of experience in astronomical instrumentation and project management among our faculty, including

- Chuck Bennett (PI of WMAP)
- Holland Ford (PI of the HST ACS)
- Toby Marriage (ACT, ABS, CLASS)
- Steve McCandliss (PI of a JHU sounding rocket program)
- Warren Moos (PI of FUSE)
- Matt Mountain (STScI Director, JWST Telescope Scientist, former Gemini Director)
- Steve Murray (PI of the Chandra HRC)
- Alex Szalay (data archive development)

Scientific interest in PFS

JHU's interests include:

- cosmology and large-scale structure
- the formation and evolution of galaxies and super-massive black holes
- the intergalactic medium
- galactic archeology

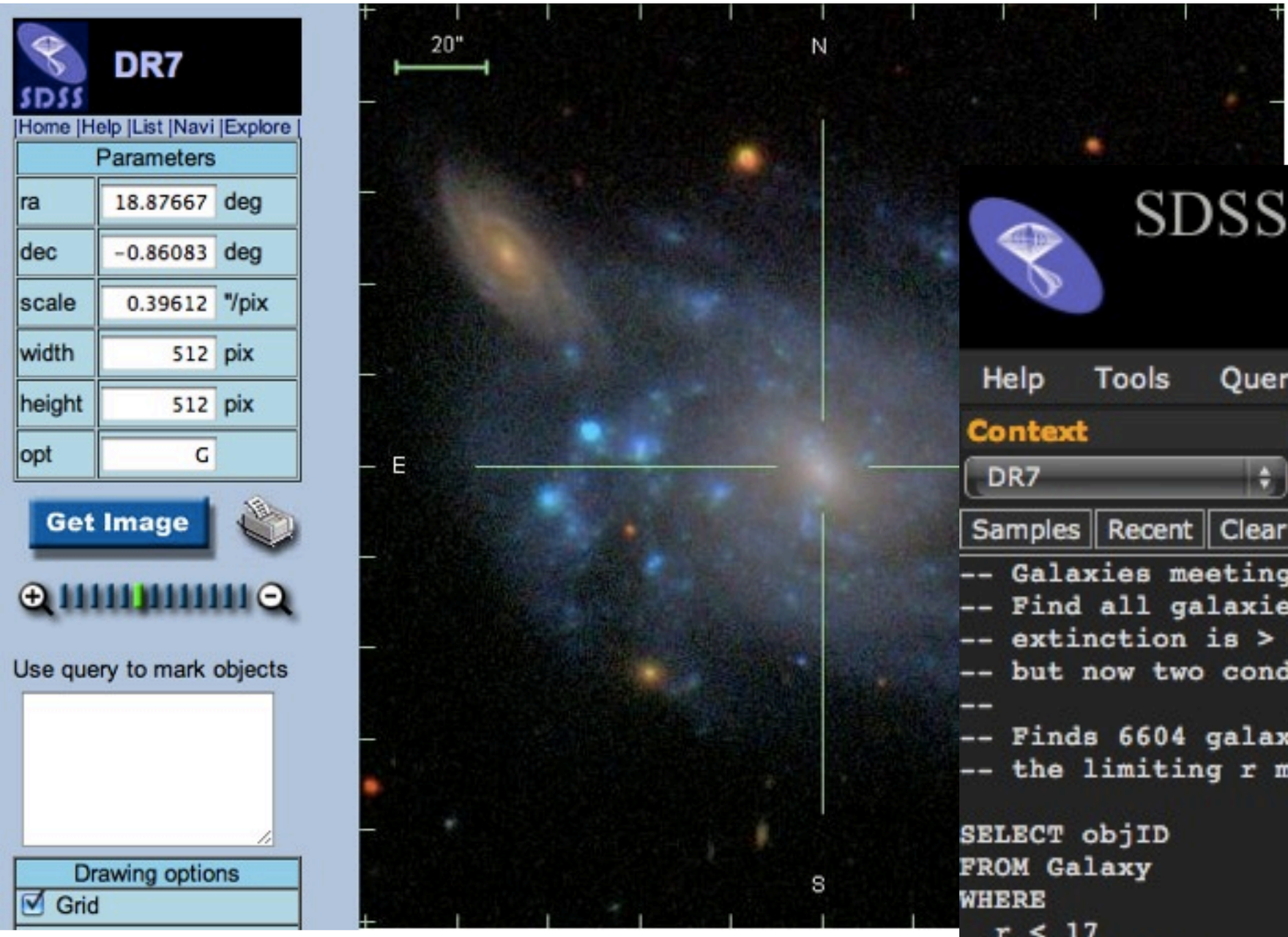
Scientifically interested faculty include:

- Chuck Bennett
- Tim Heckman
- Tobias Marriage
- Brice Ménard
- Steve Murray
- Alex Szalay
- Rosemary Wyse
- Nadia Zakamska

Data archive at JHU

Alex Szalay's group has expertise in designing and maintaining astronomical databases.

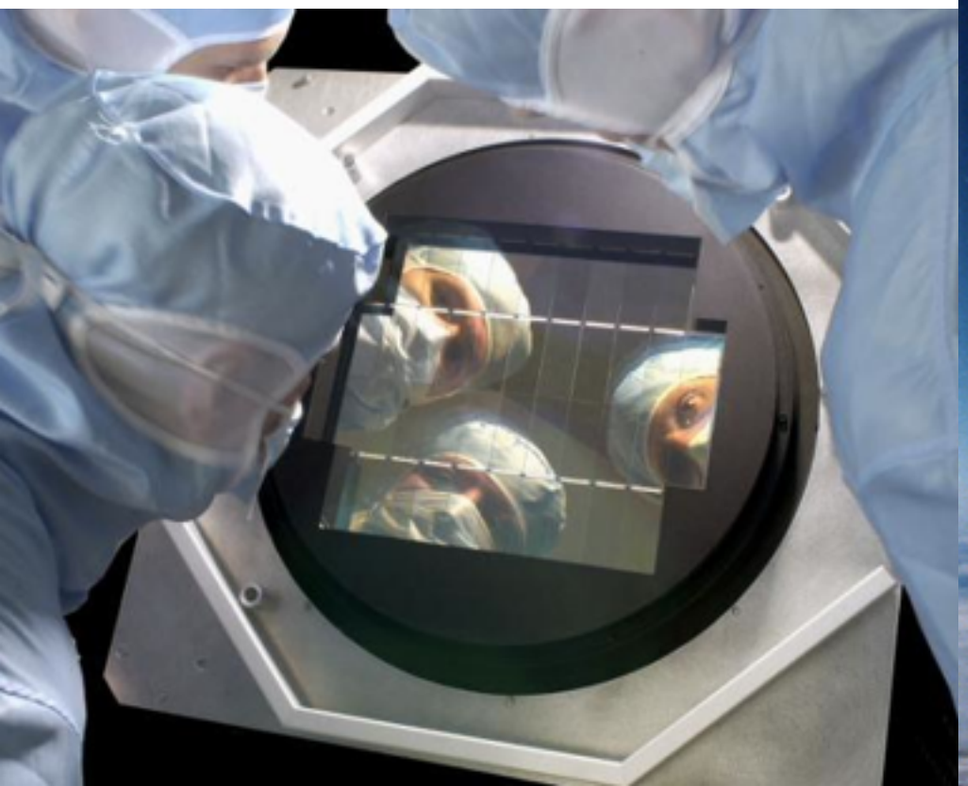
Their SkyServer allows anyone to access the entire public database of the Sloan Digital Sky Survey - over 80 million stars, galaxies, and quasars.



CFHT u-band follow-up

The French community might have some interest in using the CFH Telescope to do a u-band follow-up of PFS.

→ Useful for target selection. Contact: Yannick Mellier (IAP)



SUMMARY

Johns Hopkins is very interested in joining the PFS Collaboration

JHU can provide a $5M in-kind contribution, design & build parts of the spectrograph, contribute to the data analysis and provide the database infrastructure.

Given our long tradition of working with large surveys and international collaborations we believe that it would be a very good match.

We look forward to the possibility of joining the PFS Collaboration, work together with the other partners and be part of this ground-breaking survey.