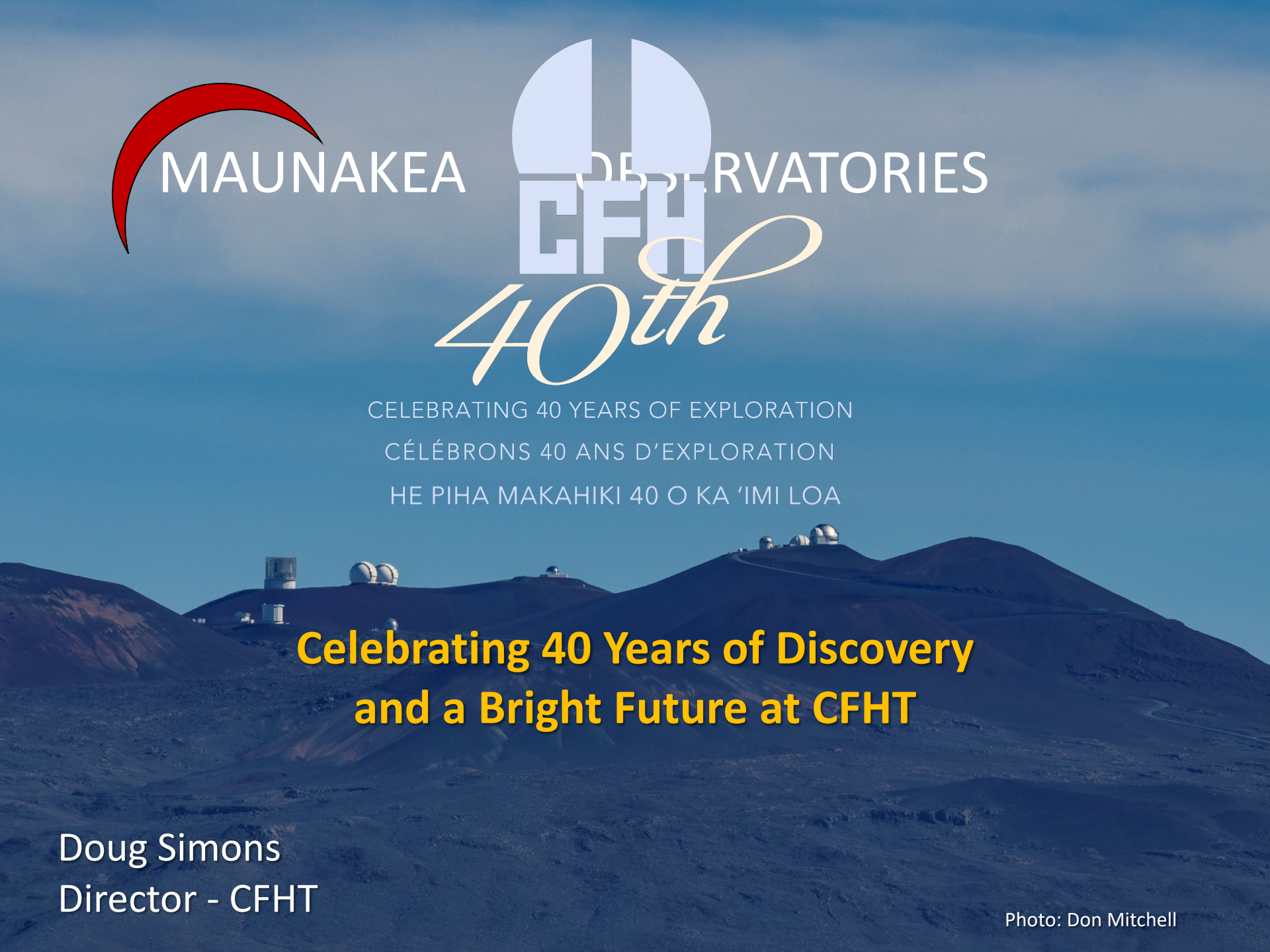


Celebrating 40 Years of Discovery and a Bright Future at CFHT

Doug Simons
Director - CFHT

Photo: Don Mitchell

CFHT's 40th Anniversary!

CFHT Users Meeting


Science Sampler

Back to Work & Aloha 'aina

Hawaii Tribune Herald
Aloha Big Island
Saturday, August 10, 2019 | Proudly serving Hilo and the Big Island since 1923 | 75 cents

Back to the summit

Associated Press file photo

The sun sets July 14 behind telescopes at the summit of Maunakea.

Astronomers to resume observations atop Maunakea

By MICHAEL BRESTOVANSKY
Hawaii Tribune-Herald

After being grounded for four weeks, Maunakea Observatories announced Friday that astronomers will return to the summit and telescopes will resume observations.

Observatory spokespeople announced that astronomers and technicians will begin work on restoring the summit telescopes to full operations with the blessing of the state and Thirty Meter Telescope opponents.

Demonstrators occupying the roadway since July 16 had permitted astronomers back up the mountain last week after Gov. David Ige rescinded an emergency proclamation he issued regarding the protests. However, safety issues prevented the observatories from authorizing a full return to service.

Since the closure of Maunakea Access Road, technicians and other

See ASTRONOMERS Page A9

Telescope confirms asteroid not a threat

Astronomers make observation just after returning to mountain

By MICHAEL BRESTOVANSKY
Hawaii Tribune-Herald

Maunakea observatories returned to work last weekend and almost immediately discovered that the world will not end next year.

On Saturday night into Sunday morning, the Canada-France-Hawaii Telescope returned to operational status after four weeks of non-use and astronomers were able to confirm that an asteroid near Earth will not strike the planet next year or within the next century.

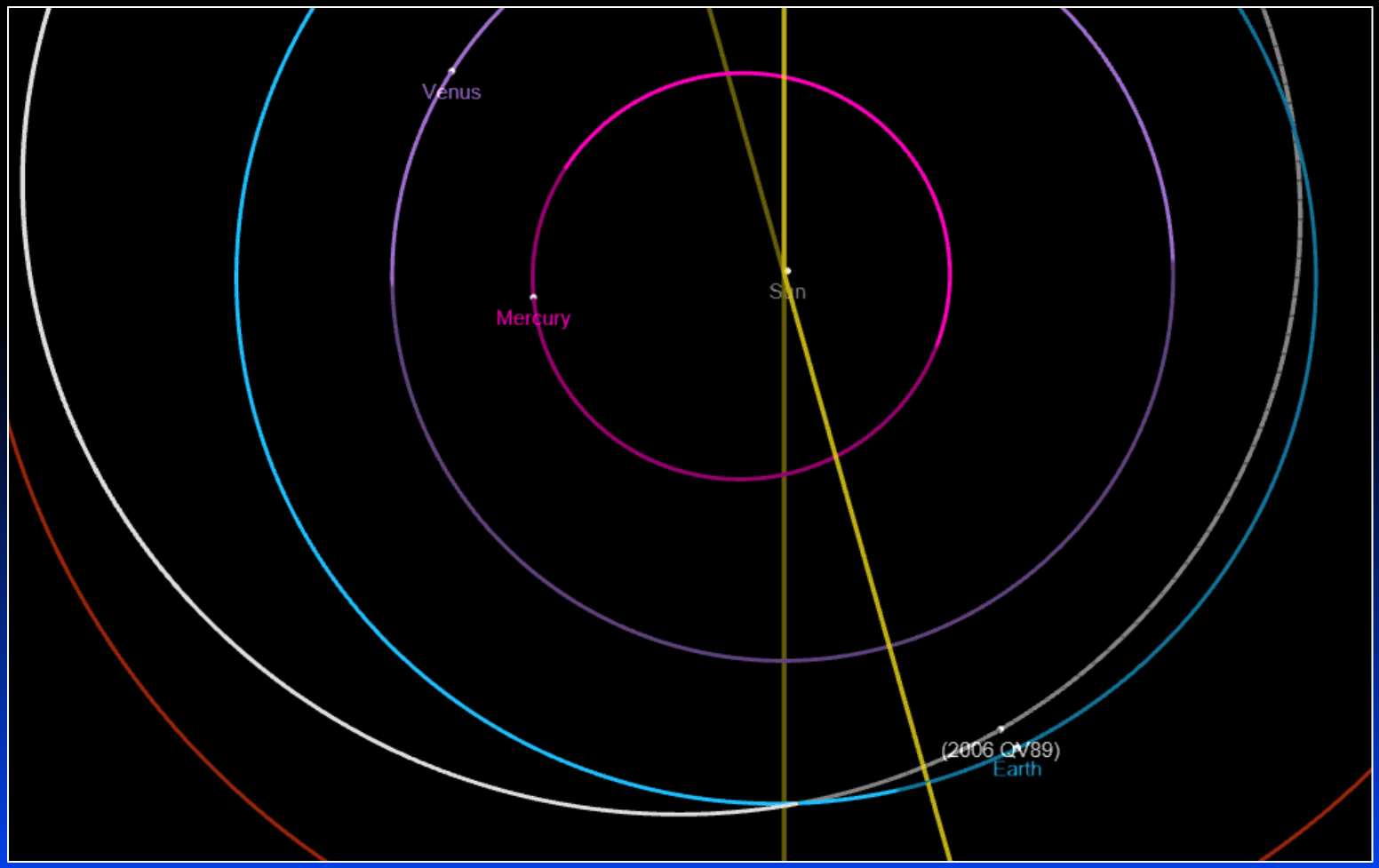
THOLEN

The asteroid, designated 2006 QV89, had previously only been observed between its discovery on Aug. 29, 2006, and Sept. 8 of that year. That observation window was not sufficient to entirely rule out a possible collision with Earth next month, however.

The European Southern Observatory's Very Large Telescope in Chile ruled out such a collision last month when it scanned the skies where the asteroid would appear if it were to strike the Earth in September and did not detect it. However, the potential trajectories of the asteroid indicated that an impact in 2020 was still possible, as well as 22 other potential impacts over the next century.

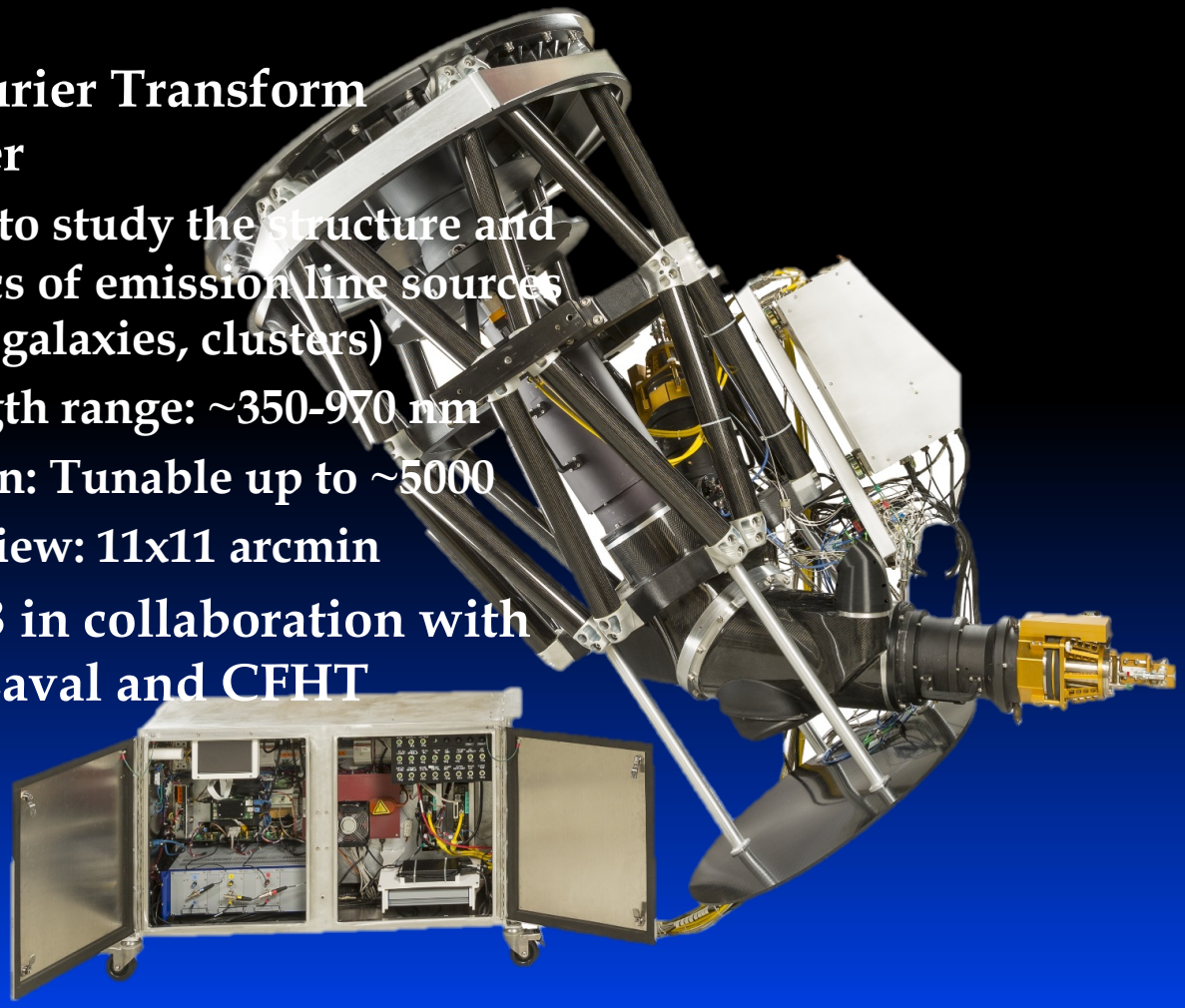
The asteroid is estimated to be roughly 30 meters in diameter, said David Tholen, an astronomer with the University of Hawaii's Institute for Astronomy who led the effort to recover the asteroid's trajectory. An object of similar size detonated in midair over

Virtual Impactor Remains "Virtual"



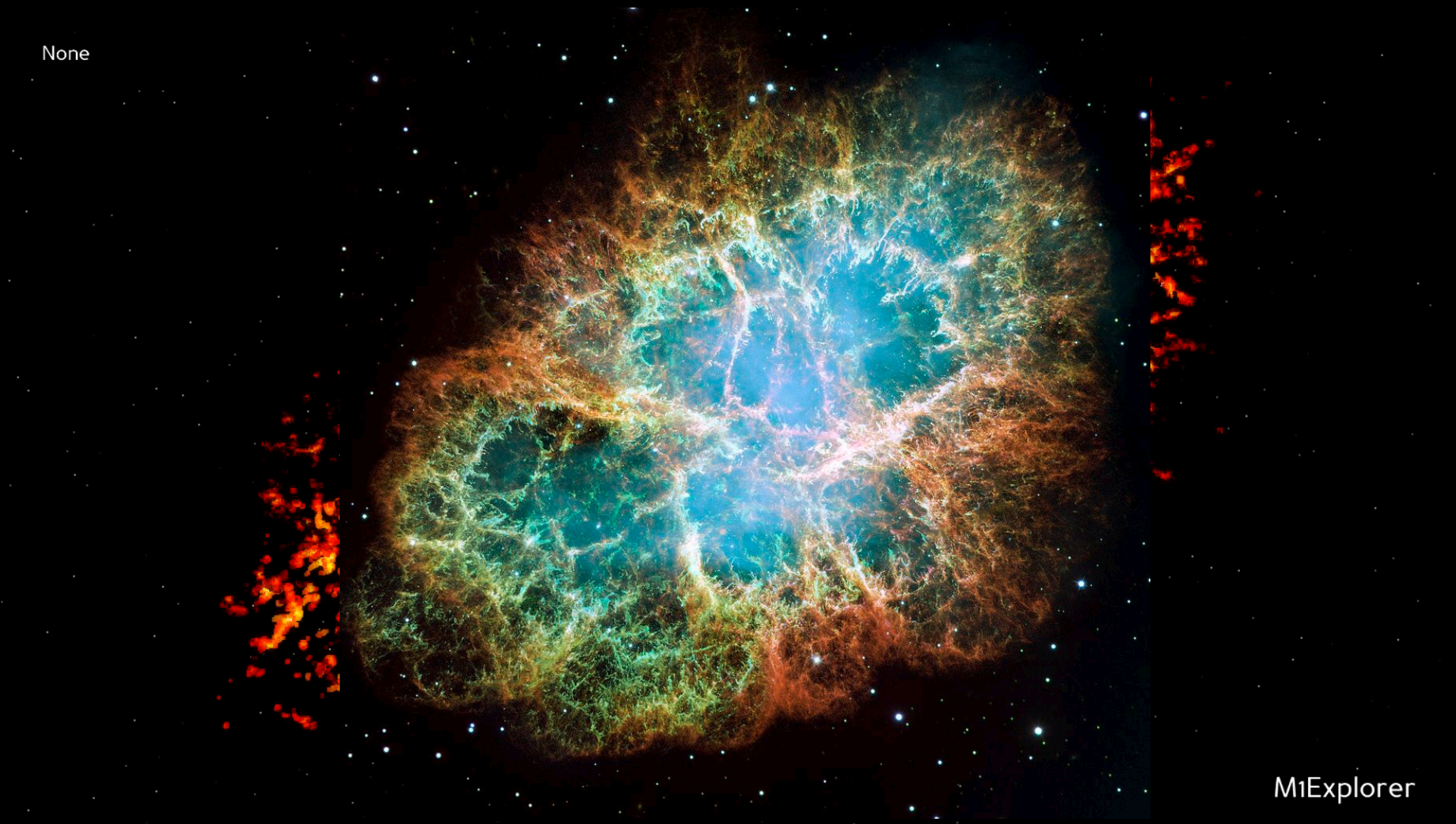
SITELLE

- Imaging Fourier Transform Spectrometer
  - Intended to study the structure and kinematics of emission line sources (nebulae, galaxies, clusters)
  - Wavelength range: ~350-970 nm
  - Resolution: Tunable up to ~5000
  - Field of view: 11x11 arcmin
- Built at ABB in collaboration with Université Laval and CFHT



3D Imaging of a Supernova Remnant

None



M1Explorer


Outreach

Maunakea Scholars

Hōkūala (Rising Star) Scholarship to JC Damaslan (Waipahu High)

Entered UH Manoa this year to major in astronomy

- 13 schools this year
- Program established on 6 islands
- On-line dual credit astronomy classes
- >500 students in program to date!

- ʻOumuamua – First interstellar asteroid/comet
- Kamoʻoalewa – Asteroid that appears as a quasi-moon to earth
- Kaʻepaokaʻāwela – rare retrograde orbiting asteroid (captured interstellar asteroid?)
- Pōwehi – first imaged black hole
- Leleākūhonua – Most distant object known in our solar system
- Pōniuāʻena – Quasar containing highest mass black hole known at the edge of the universe

The Physics of Pō

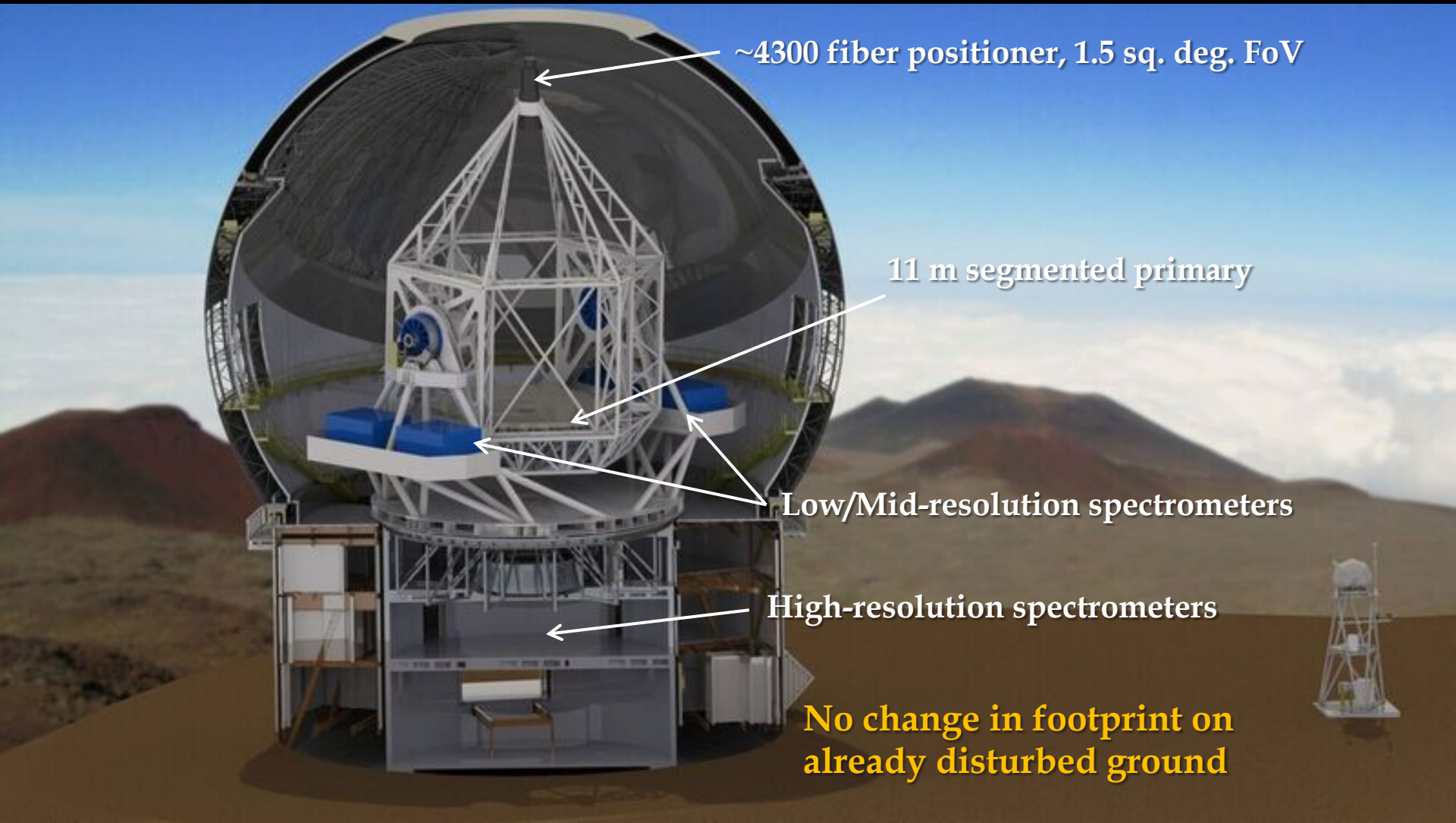
Lessons from Nature


Future Plans...


Maunakea Spectroscopic Explorer

Maunakea Spectroscopic Explorer

Essential Design Elements

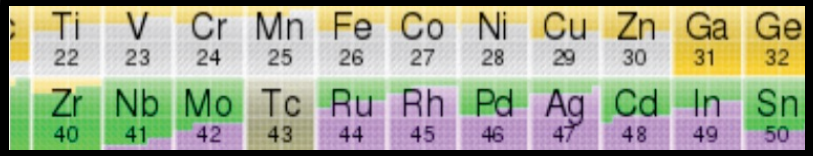


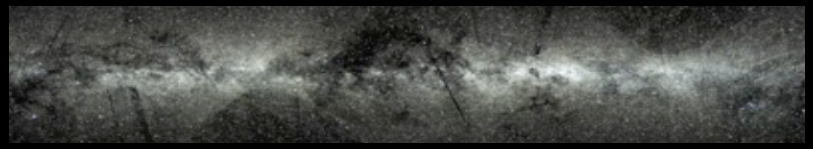
Maunakea Spectroscopic Explorer

MSE Science

Exoplanets and stellar astrophysics
Maria Bergemann & Daniel Huber

Chemical nucleosynthesis
Sivarani Thirupathi & David Yong



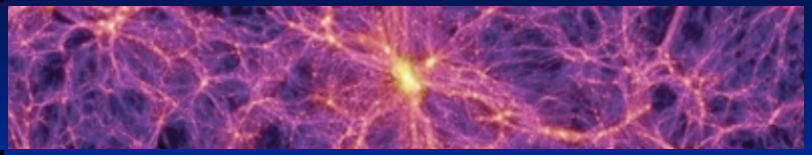


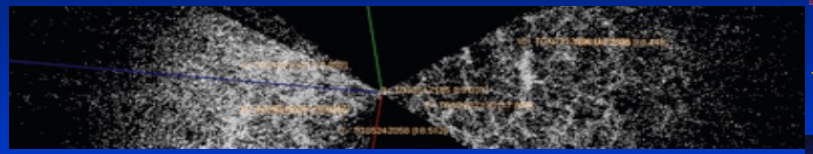
Milky Way and resolved stellar pops
Carine Babusiaux & Sarah Martell

Galaxy Formation and evolution
Kim-Vy Tran & Aaron Robotham

AGN and supermassive black holes
Yue Shen & Sara Ellison

Astrophysical tests of dark matter
Ting Li & Manoj Kaplinghat



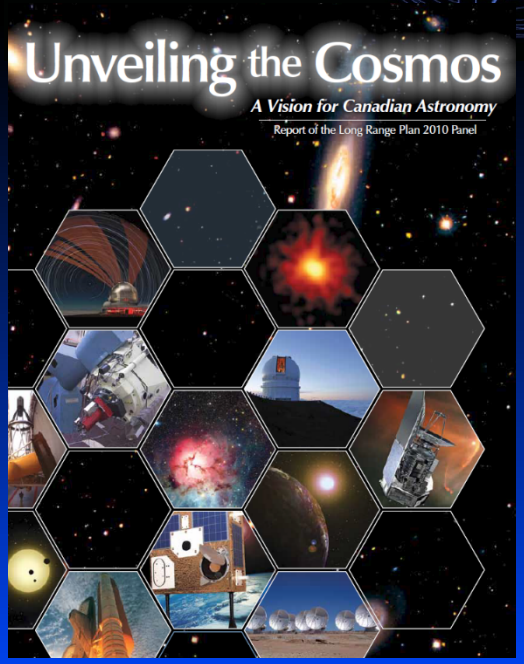


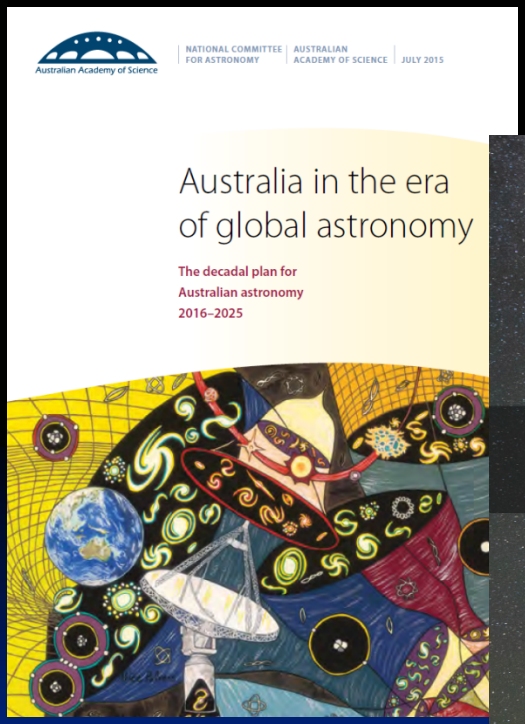
Cosmology
Will Percival & Christophe Yeche

Time domain astronomy and transients
Adam Burgasser & Daryl Haggard

Maunakea Spectroscopic Explorer

International Strategic Planning





Plus 2020 French Prospectiv, strategic planning in China, etc...

Important CFHT/MSE Distinctions

- 40 year presence of CFHT in the community has enormous value in making the case for MSE
- Will not seek MSE permits until Maunakea Science Reserve Master Lease is renewed – *focus of my attention these days*
  - *In general expect those opposed to MSE are opposed to all telescopes on Maunakea in the future – Master Lease Renewal*
- MSE has identical footprint as CFHT and is on "previously disturbed" land
- CFHT site identified as recyclable under Comprehensive Management Plan
- Extensive/innovative CFHT community engagement


CFH
40th
CELEBRATING 40 YEARS OF EXPLORATION
CÉLÉBRONS 40 ANS D'EXPLORATION
HE PIHA MAKAHIKI 40 O KA 'IMI LOA
Mahalo...