

A large white dome-shaped telescope structure, likely part of the Canada-France-Hawaii Telescope (CFHT), is the central focus on the left side of the image. The dome is illuminated from below, showing its segmented panels. The background is a dramatic sky at sunset or sunrise, with a gradient from deep blue at the top to a bright orange glow near the horizon. Wispy clouds are scattered across the sky. In the lower right foreground, the silhouette of a vehicle, possibly a truck or SUV, is visible on a road or path. The overall scene conveys a sense of scientific observation and natural beauty.

CFHT Report

Doug Simons
Executive Director



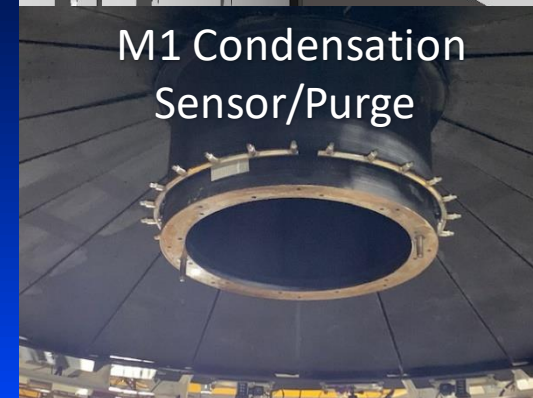
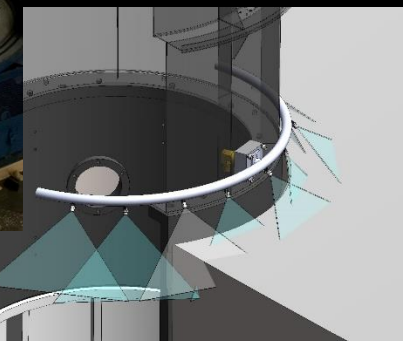
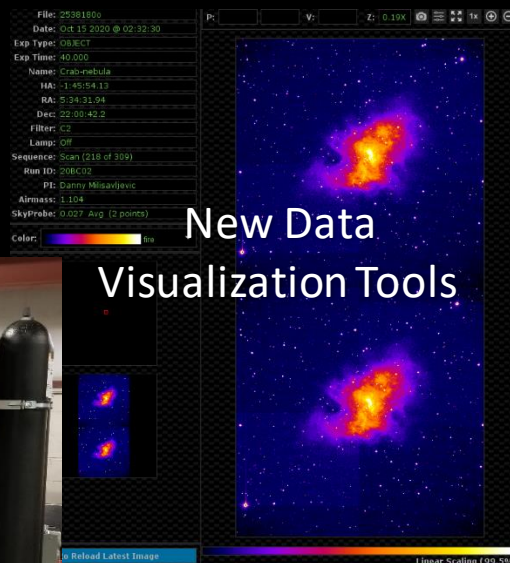
Upgrades and Innovations @ CFHT



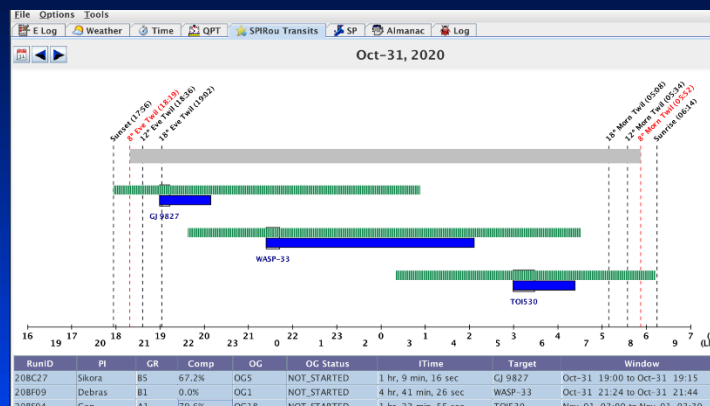
New Hydraulic Power Plant



SPIRou Cass Unit Cooler



M1 Condensation Sensor/Purge



Exoplanet Transit Planning Tool

✱ Spectacular 3D rendering of M1 via SITELLE dataset revealing intricate honey-comb like pattern in the SNR

- ✱ ~400,000 data points (velocity vector, composition) derived from FTS spectral-imaging

- ✱ Assumes ballistic (unaccelerated) ejection of material

✱ Used SN simulations to compare SNR structures with SN core conditions – results suggest progenitor detonated via heavy-iron core collapse

- ✱ Counter to expectation that progenitor had a oxygen-neon-magnesium core

- ✱ Need more detailed analysis of 3D distribution of elements to better understand SN progenitor

✱ Promising technique that can be applied to other nearby SNRs

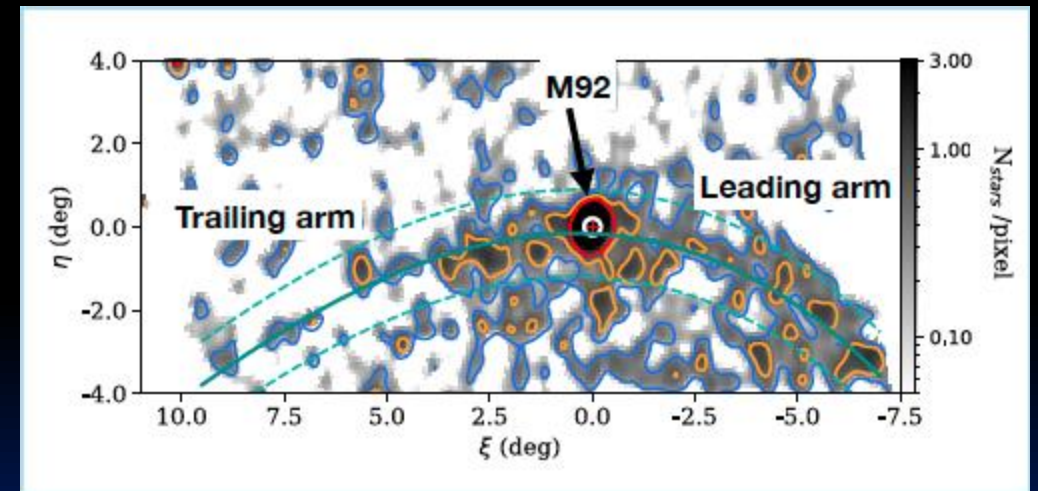
THE CRAB NEBULA
THROUGH THE EYES OF SITELLE

Credit: Thomas Martin, Danny Milisavljevic and Laurent Drissen



New M92 Stellar Stream Discovered

- ✱ Canada-France Imaging Survey (CFIS) recently detected a stellar stream emanating from the globular cluster M92
 - ✱ MegaCam at CFHT and Pan-STARRS1 data
 - ✱ Stream spans ~ 17 deg
- ✱ “Matched filter” method used to reveal stream despite numerous foreground stars – testament to high image quality in CFHT and PS1 datasets
 - ✱ Color-color diagrams used to help distinguish between field and cluster members – U-band very sensitive to metallicity
 - ✱ Also used GAIA data to confirm stream
- ✱ Combined mass of stars in stream $\sim 10\%$ of those in M92
- ✱ Dynamical models suggest stream formed within last ~ 500 million years
 - ✱ Given ~ 11 Gy age of M92, suggests this cluster migrated significantly in its orbit around Milky Way



M92 stellar stream (image courtesy CFIS)



SPIRou Observations of AU Mic Planetary System

- ✱ Mass, density and orbital tilt of AU Mic b measured using SPIRou and TESS data
- ✱ Warm Neptune class planet with 8.5 day orbital period
 - ✱ ~4X earth radius and ~17x earth mass so density comparable to water
- ✱ AU Mic host star is extremely active (large star spots, magnetic field, etc.) so detecting RV signature of planet challenging
 - ✱ Demonstrates the power of subtracting RV noise sources (~10X higher than RV signal) via spectropolarimetry

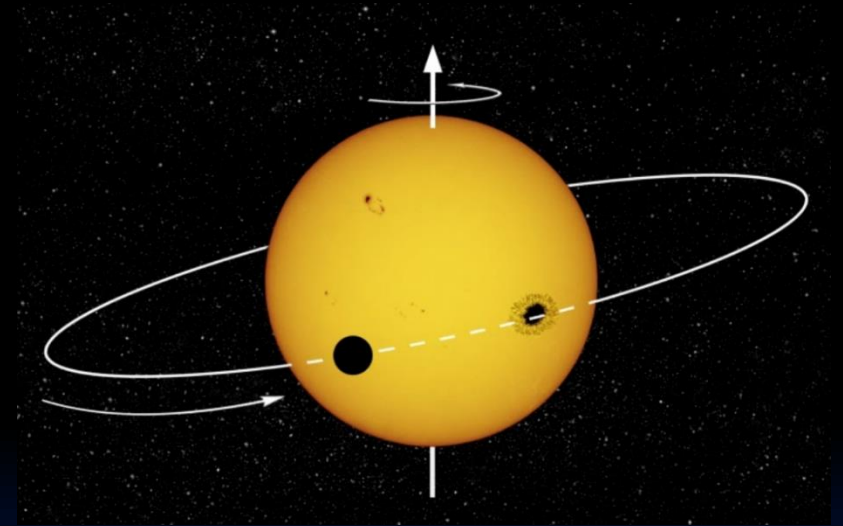


Image credits: R Cardoso Reis (IA/UPorto)

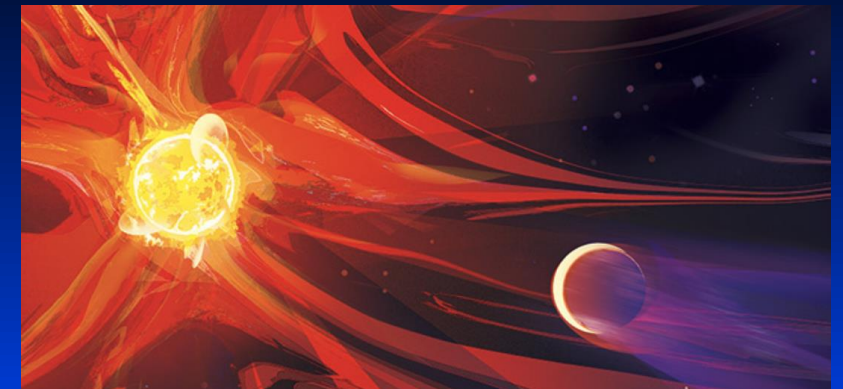
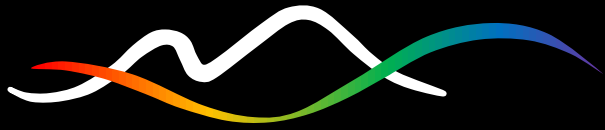


Image credits: NASA-JPL/Caltech



MSE Update



Maunakea Spectroscopic Explorer

MSE Project Core Team



KEI SZETO
PROJECT MANAGER



JENNIFER MARSHALL
PROJECT SCIENTIST



SAMUEL C. BARDEN
SYSTEMS ENGINEER



JENNIFER SOBECK
SYSTEM SCIENTIST



ALEXIS HILL
DEPUTY PROJECT ENGINEER



ANDREEA PETRIC
DEPUTY PROJECT SCIENTIST



MARY BETH LAYCHAK
DIRECTOR OF STRATEGIC COMMUNICATIONS



RICK MUROWINSKI
PROJECT ADVISOR



LAURIE DALE
OFFICE ADMINISTRATOR



BARBARA SMALL
PROJECT ADMINISTRATOR



CHRISTIAN SURACE
PESA TECHNICAL LEAD

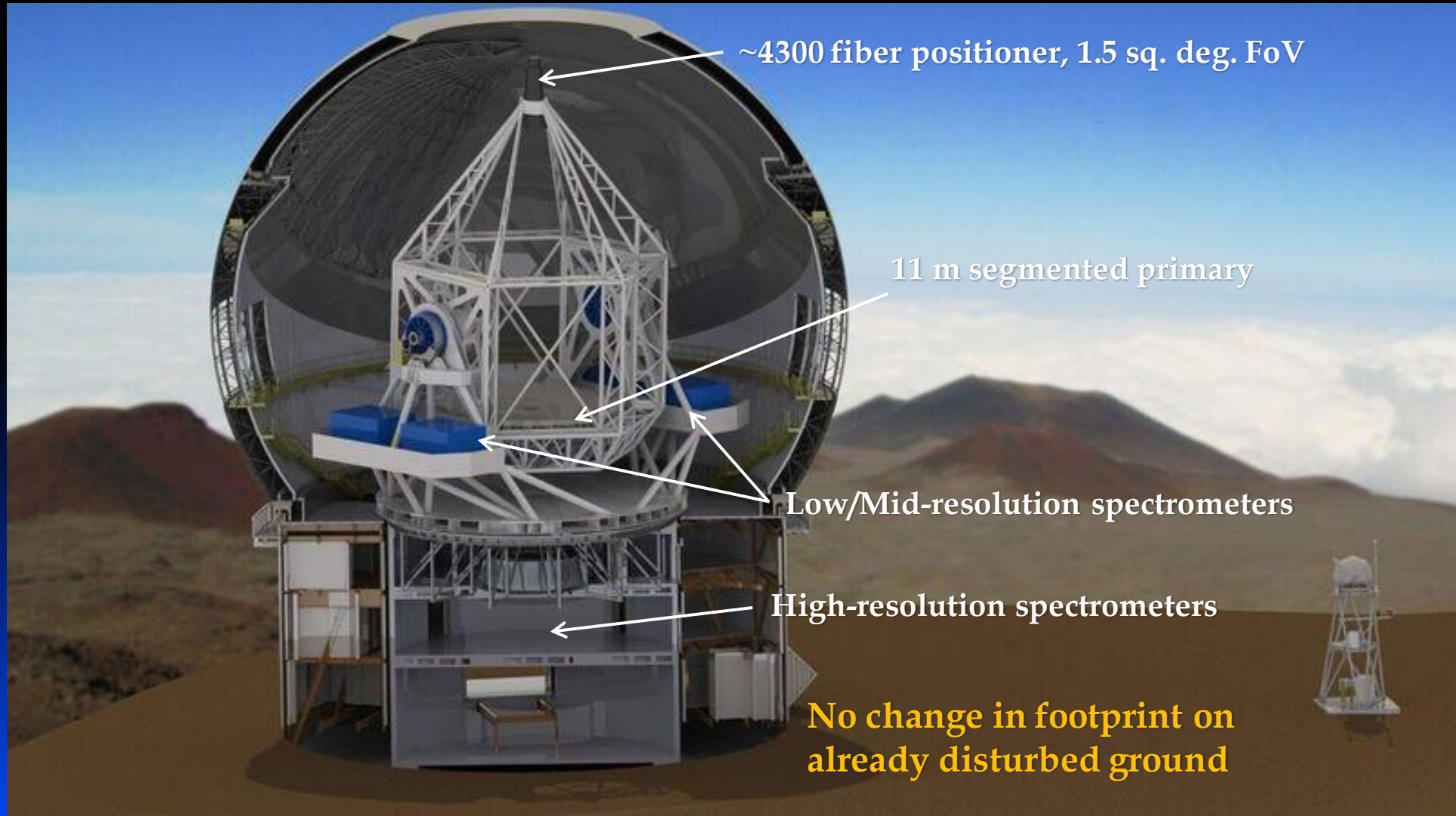


LISA WELLS
SHAREPOINT ADMINISTRATOR



Maunakea Spectroscopic Explorer

MSE Essential Design Elements





Partner Summary

✱ Project Participants

- ✱ AAO (Australia)
- ✱ NAOC (China)
- ✱ CNRS (France)
- ✱ UH IfA (Hawaii)
- ✱ IIA (India)
- ✱ Kyung Hee University (S. Korea)
- ✱ Texas A&M University

✱ Observers

- ✱ US NSF NOIRLab
- ✱ UK Consortium (ATC)

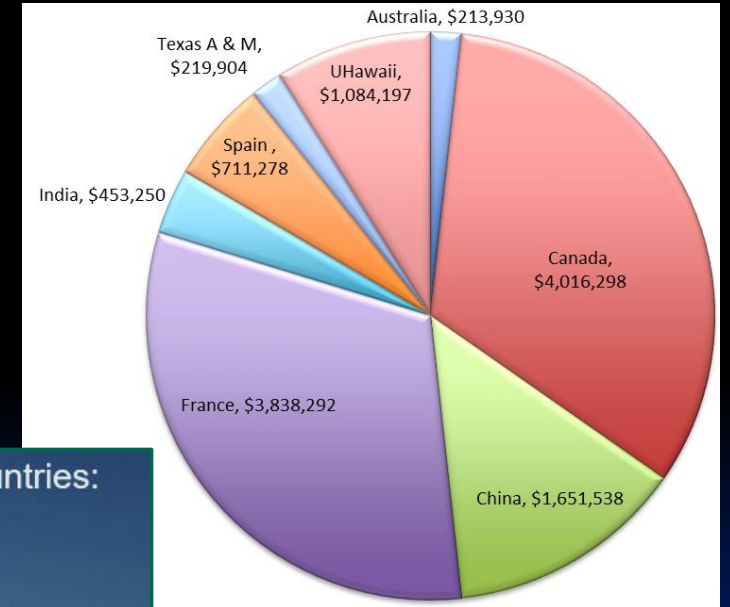
MSE Science Team

Currently 422 members from 39 countries:

- | | |
|-------------------|------------------------|
| • Australia* – 33 | • India* – 12 |
| • Belgium – 7 | • Italy – 12 |
| • Canada* – 38 | • S. Korea* – 6 |
| • Chile – 7 | • Spain – 14 |
| • China* – 32 | • United Kingdom† – 44 |
| • France* – 41 | • USA† – 109 |
| • Germany – 21 | • Other – 46 |

* Current MSE participants

† Current MSE observers



MSE Funding



Maunakea Spectroscopic Explorer

MSE Science Themes



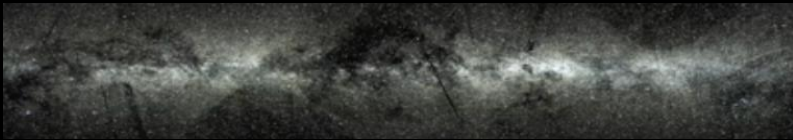
Chemical nucleosynthesis

Sivarani Thirupathi & David Yong

Exoplanets and stellar astrophysics

Maria Bergemann & Daniel Huber

Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge
22	23	24	25	26	27	28	29	30	31	32
Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn
40	41	42	43	44	45	46	47	48	49	50

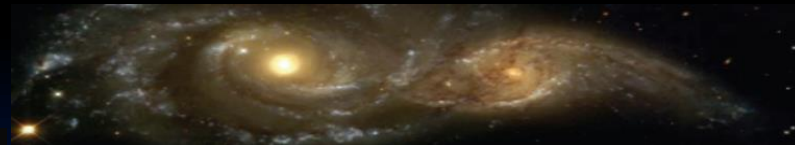


Milky Way and resolved stellar pops

Carine Babusiaux & Sarah Martell

Galaxy Formation and evolution

Kim-Vy Tran & Aaron Robotham



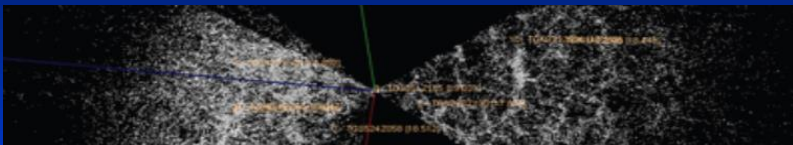
AGN and supermassive black holes

Yue Shen & Sara Ellison



Astrophysical tests of dark matter

Ting Li & Manoj Kaplinghat



Cosmology

Will Percival & Christophe Yèche

Time domain astronomy and transients

Adam Burgasser & Daryl Haggard





- | | | | | |
|---|---|--|---|--|
| | L1 documents
OAD for PDPRR
OCD for PDPRR
ORD for PDPRR | | L0 documents
DSC
SRD/SRO
ConOps | |
| L1 PE deliverables
AIV plan (draft)
OBF CoRD
AGC DRD | L1 Mgt support doc
Management plan
Cost book, TBC
Integrated schedule, TBC
HARA report, TBC
Issue tracker report, TBC
WBS dictionary
Config mgt and reviews plan
Project risk register
Project standards list
Config Index Doc
CoDR CID
PDPRR CID | L0 documents
L0 support doc
L0 tasks
L0.5 Sci&Eng documents
L0.5 Sci&Eng tasks
L1 documents
L1 Mgt support doc
L1 Mgt tasks
L1 SE support doc
L1 SE tasks
L1 PE deliverables
L1 PE tasks
L2 tasks support | L0 support doc
Sci questionnaires
HR sci case
LMR sci case
L0 tasks
L0.5 Sci&Eng documents
H-band table report
DRS report
Sci cal plan | L1 SE support doc
SE mgt plan
DRD template
IDD & N^2 dia
ICD template
FA and UC report
CAD mgt plan
Digital mockup
DOORS report
System budgets
Sensitivity budget doc
Obs Eff budget doc
Other budgets doc
Complicance Matrix w |
| M1S design doc
Segment figure error budget
M1S tech memo
M1S DRD
Segment figure error review
Scal CoDR
LMR delta-CoDR
LMR DRD
HR light-PDR
HR DRD
OSS ICD
PESA sys-level CoDR | | | | |



A sunset scene with a bright sun low on the horizon, casting a warm orange glow over a dark, silhouetted forest. In the lower-left foreground, a vertical cactus stem with small, dark, rounded segments is visible.

Maunakea Observatory Strategic Considerations

Master Lease Renewal
Community Relations



Maunakea Spectroscopic Explorer

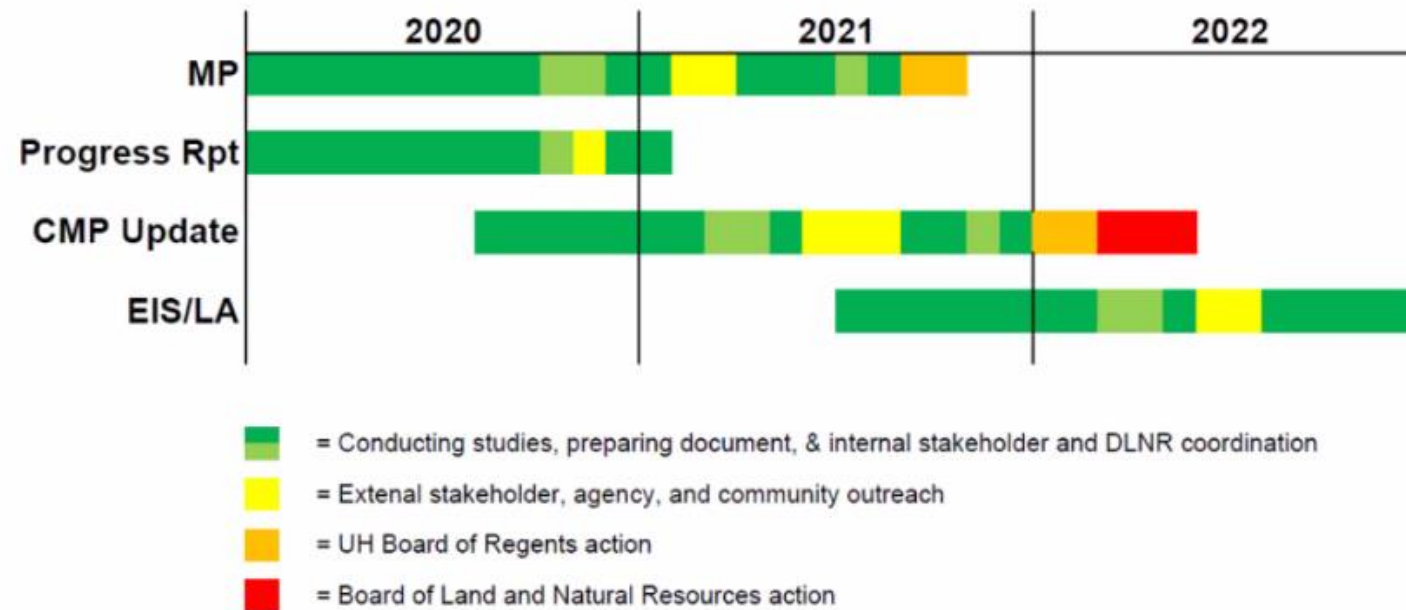
Big Picture



- * The future of Maunakea astronomy reduces to 3 fundamental elements
 - * Land = State/UH
 - * Resources (funds, telescopes) = MKO
 - * People = Community
- * Master/sublease conflicting time constraints
 - * Resolve as fast as possible
 - * Need to have a decision by late this decade
 - * Need to have a decision by late this decade
- * Community
 - * Community
 - * Maunakea Observatories
 - * University of Hawaii
- * By its nature, the Maunakea site on Maunakea is a unique site on Maunakea
 - * "Local change" is a key factor in the Master Lease approval, hence the focus we have on the site on Maunakea

Master Lease Renewal Elements

Planning Process Conceptual Schedule



Land Board
consideration of entire
package mid-2023



AKO Outreach in the C



Mary Beth Laychak

Michelle Hartman

John O'Meara

Maxine's iPhone

Darrin Carlson

Brittini Kuwahara

zoom

MKO COVID Community Responses



CONNECTALOHA2020@GMAIL.COM FOLLOW US ON FACEBOOK

Connect Aloha is a volunteer community project created to help share info about available resources and provide opportunities for people to connect so that we can all support each other during this difficult time.

FOOD RESOURCES

FREE COMMUNITY MEALS

- St. Columba's Church- Pa'auiolo
43-1425 Hauola Rd
Tuesdays 4:30 PM- 5:30 PM
- huiMAU- next to Pa'auiolo Store
Fridays 12:00 PM -1:00 PM
- Honoka'a Hongwanji
Fridays 4:00 PM -5:30 PM

HĀMĀKUA FOOD PANTRY

- Salvation Army- Honoka'a
Wednesdays 9 AM- 12 PM
- Waimea Kōkua Christian Ministries- Wednesdays 9:30-12:30

DOE GRAB & GO

Breakfast 7:30-8:00 AM & Lunch 11:30- Noon

- Honoka'a High
- Waimea Elementary
- Laupāhoehoe CPCs (lunch only)

For any child (up to 18-yr-old) regardless of school enrollment. Must be in vehicle.

THE FOOD BASKET DRIVE-THRU FOOD DISTRIBUTIONS

- Papa'aloa Gym- 4th Friday of the Month at 10 AM
- Honoka'a Gym- 4th Friday of the Month at 12 PM

UNEMPLOYMENT INFORMATION

email the office: Hilo: dlir.ui.hilo@hawaii.gov
Kona: dlir.ui.kona@hawaii.gov

Need a HUI PASSWORD RESET? Call (833) 901-2272
Need a PHONE APPOINTMENTS? Call (833) 901-2275
Need to REQUEST A BACKDATE? EMAIL: DLIR.UI.BACKDATE@HAWAII.GOV

NORTH HAWAII COVID-19 Testing
Queen's North Hawaii Community Hospital,
at the main hospital site: Monday,
Wednesday, and Friday, 10 a.m. til 2 p.m.

Visit www.vibranthawaii.org & follow on Facebook for Island-wide information/resources

Masks Made by Community

SEW DA KINE | EAST HAWAII MASK SEWING CIRCLE | HOPE DRAGONS | PUNA HONGWANJI
HILO HONGWANJI | EAST HAWAII 4-H | CHERYLE IKEDA | KILAUEA KREATIONS
CREATIVE ARTS HAWAII | ARC OF HILO | UNIVERSITY OF HAWAII AT HILO

3,872 MASKS DISTRIBUTED

\$58,080 VALUE OF DONATIONS

Vibrant Hawaii

Masks Made For Community

'ANO'ANO CARE HOME | BIG ISLAND FAMILY MEDICINE, INC. | EAST HAWAII INDEPENDENT PHYSICIANS ASSOCIATION, HAWAII CARE CHOICES | HAWAII ISLAND HEALTHCARE, INC. | PACIFIC ONCOLOGY CENTER | HAWAII RADIOLOGIC ASSOCIATES | HPM BUILDING SUPPLY | MALAMA OLA NA OIWI | KAISER MEDICAL CENTER | PAHOA PHARMACY | ROY M. KOGA FAMILY MEDICINE CENTER | HILO MEDICAL CENTER | BENITA CAMACHO M.D., LLC | MAHUKO ACCESS | DNP INC | WES

FULL CALABASH FUND

Kohala Center



Feeling Overwhelmed?

Help is available! Our Island & communities are strong and here to support each other. Please reach out!

Text "ALOHA" to 761741 for 24/7 crisis text support.

Call crisis line at 1-800-753-6879 24/7 to talk to someone who can help.

Mental health professionals available 24/7 during the crisis. call 1-866-342-6892 through Optum.

The COVID-19/Corona crisis is impacting us all. Please know that you are valued by our community. This crisis, and all the feelings it causes will pass. Please do not suffer alone!

THE FOOD BASKET HAWAII ISLANDS FOOD BANK

TIPS NEWS HEALTHY FOOD ACCESS CONTACT DONATE MAHALO

"Kupuna Pantry" - Working to improve the health of Hawai'i Island's Seniors



Food Basket

What is

BIG ISLAND RURAL AGRICULTURAL INDUSTRIES DISTRIBUTION & GROWING ENTERPRISE STRATEGIES

Boys & Girls Club



VOLUNTEERS NEEDED

Keiki Heroes!

Keiki Heroes Website



Supporters



- ★ Vibrant Hawaii
- ★ Yuko Green

2021+ Community Engagement Program

- * Internal MKO engagement program
- * Kama'aina Connections Program
 - * Led by Keck (Rich Matsuda)
- * Informal small-group discussions
 - * Hosted by various community
- * Curated conversations (talk story)
 - * Build off EnVision Maunakea
- * Community meetings (e.g. via community associations)
- * Digital engagement via MKO website
- * Christine Matsuda started Jan 2021 as the fulltime MKO community engagement program manager
 - * Formerly with Bennet Group, MKO cosponsored position



Christine Matsuda



Mahalo

