



2023 RESEARCH INFRASTRUCTURE WORKSHOP

JUNE 27 - 30, 2023 • WASHINGTON, D.C.

Contreras Fire- Kitt Peak National
Observatory- June 2022

CREDIT: RUBIN OBSERVATORY/NSF/AURA





2023 RESEARCH INFRASTRUCTURE WORKSHOP

Zade Arnold
Sr. Environmental Health & Safety
Technician
Kitt Peak National Observatory - NoirLab





Kitt Peak



- Kitt peak is located in the Schuk Toak District on the Tohono O'odham Nation 60 miles west of Tucson, Arizona
- In 1958 Kitt Peak National Observatory officially began construction.
- Total of 24 telescopes currently located on KPNO.
- Home to one of the largest arrays of optical and radio telescopes in the world
- Elevation of 6800 ft. in the Quinlan mountain range





June 2022- Contreras Fire



On the night of June 11, 2022 a lightning strike 8 miles south of Kitt Peak started a wildfire.

Our site along with other local ranches in the area went on high alert

We were assigned a type 3 fire team to begin to assess plans of action, risks, and site evaluation.

Rough terrain and lack of roads made accessibility hard for fire crews to initially extinguish the fire.



- Scientific staff began to start shutting down telescope equipment
- Accountability of all staff on site remained priority in the event of sudden evacuation
- We worked closely with the department of forestry, the tribal wildfire chief and our assigned wildfire team to assess the situation.





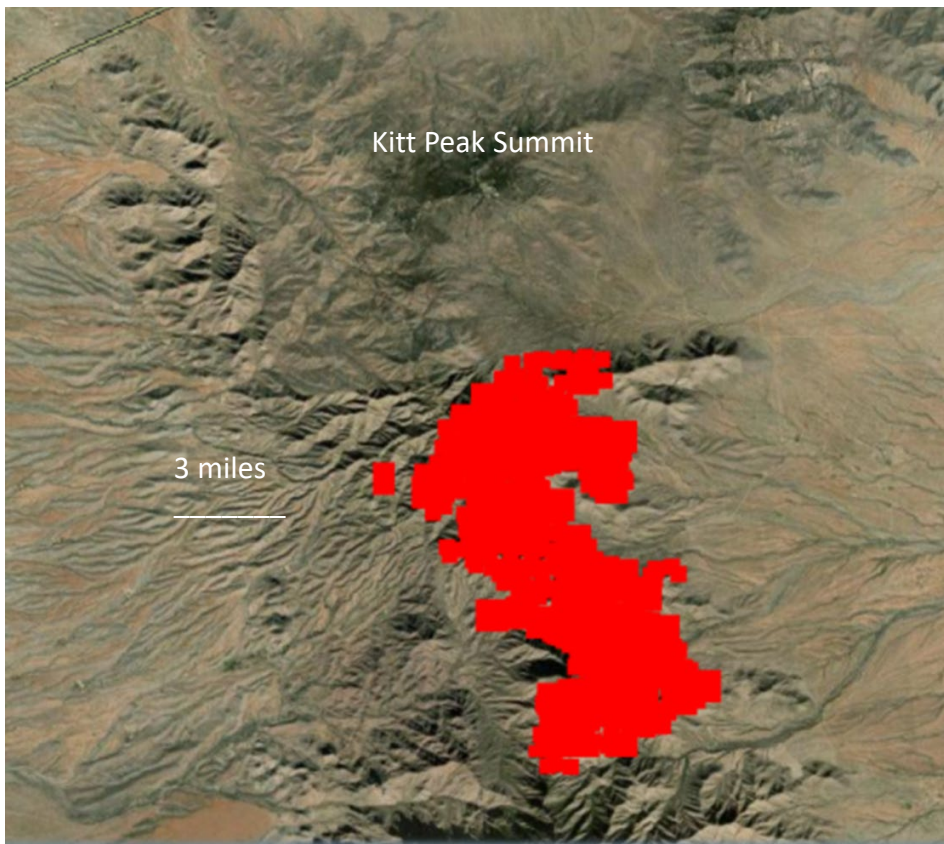
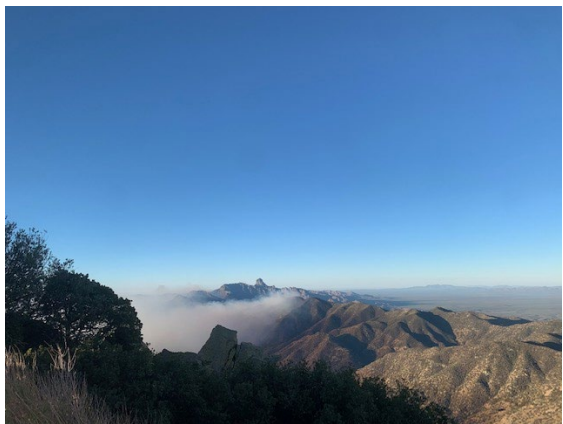
CREDIT: RUBIN
OBSERVATORY/
NSF/AURA



June 14th 2022

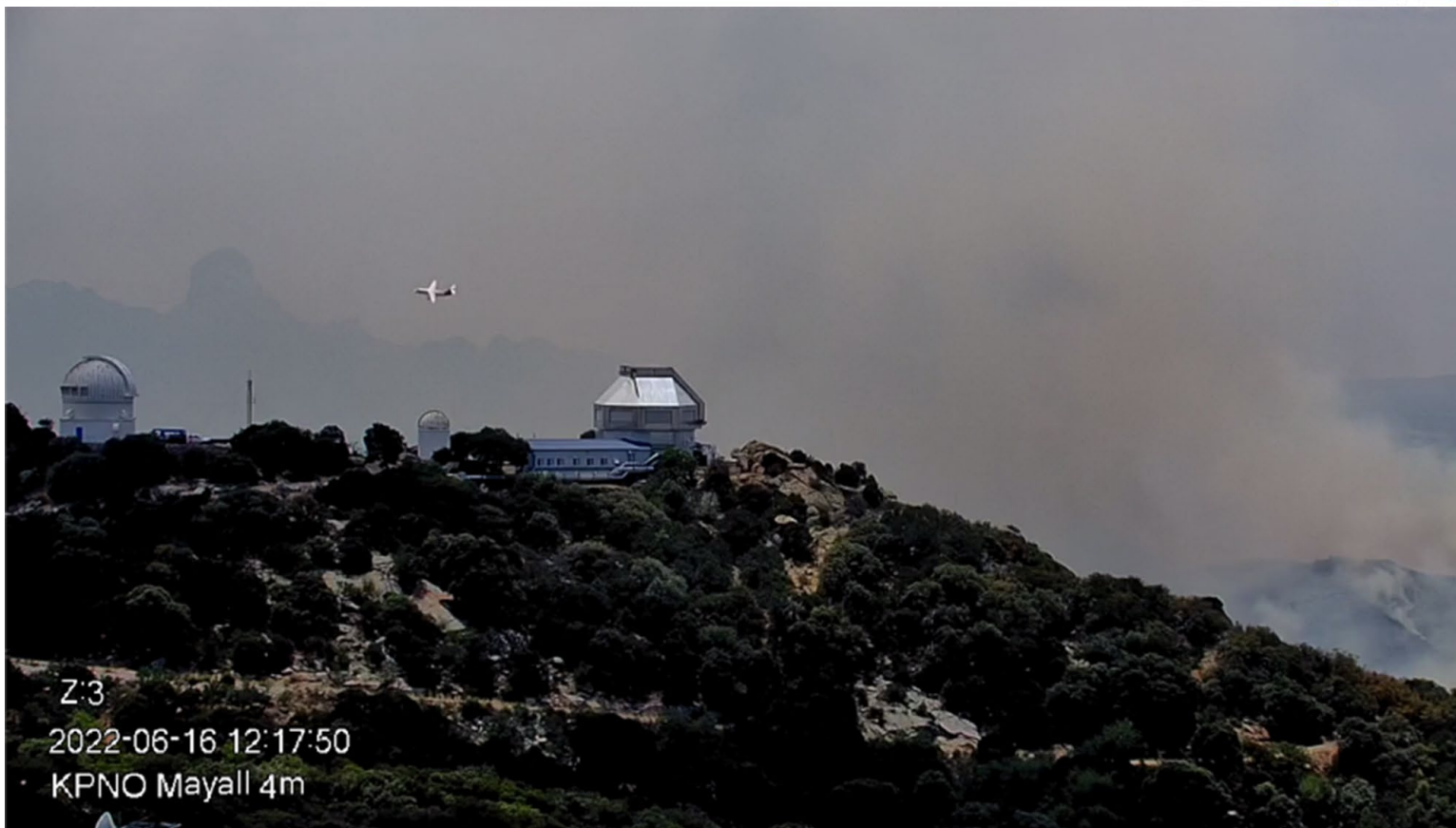


- When the fire approached 3 miles away from the observatory, Staff was instructed by fire crews to evacuate the site on June 15th
- At that time we switched from a type 3 fire team fire to a type 2 fire team.
- Fire crews began, cutting a fire line the entire south ridge of the peak from the solar telescope to calypso





CREDIT: RUBIN
OBSERVATORY/
NSF/AURA



Z:3

2022-06-16 12:17:50

· KPNO Mayall 4m



CREDIT: RUBIN
OBSERVATORY/
NSF/AURA



Z:1
2022-06-15 20:37:00
KPNO Mayall 4m



Z:16
2022-06-16 18:37:15
KPNO Mayall 4m



Contreras reaches KPNO

CREDIT: RUBIN
OBSERVATORY/
NSF/AURA

- On June 17th at 3:30 AM the Fire crossed highway 386 at mile 8.5 south of MDM observatory. All persons on the summit were requested to stage in visitor center parking lot.
- On this day, The Contreras Fire became the # 1 wildfire in the United States, so any support requested was granted in order to save the structures on Kitt Peak.





CREDIT: RUBIN
OBSERVATORY/
NSF/AURA





CREDIT: RUBIN
OBSERVATORY/
NSF/AURA





Post Fire And Recovery

CREDIT: RUBIN
OBSERVATORY/
NSF/AURA





- Multiple structures damaged at Kitt peak- dorm 3, 4, and a storage shed on the summit, a dorm and cabin at the southwest ridge were lost during the fire.
- Power lines leading to KPNO were severely burned and the mountain ran on generator power for months post fire
- Guard rails along highway 386 burned down.
- Fiber connections around the mountain had burned.
- Water systems needed to be inspected post fire-
- loss of vegetation lead to heavy erosion of soils allowing rock slides multiple places on highway 386.



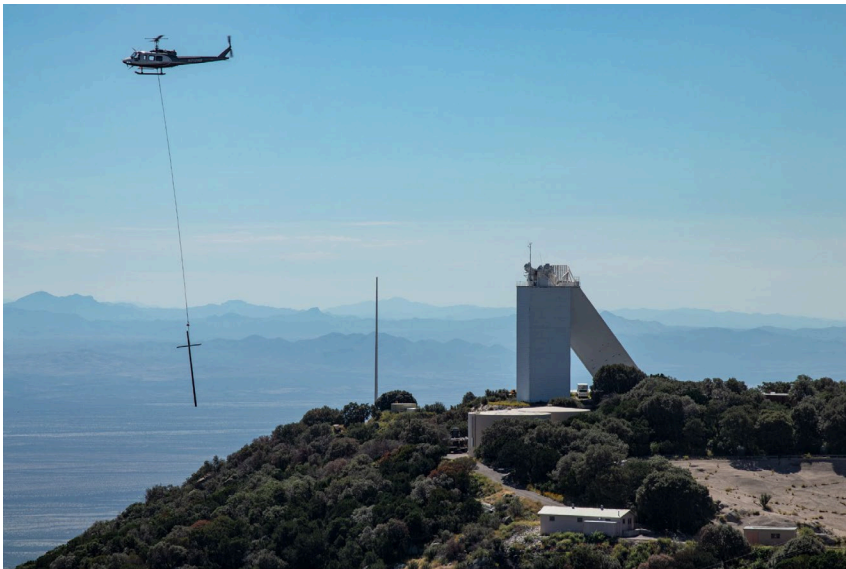


CREDIT: RUBIN
OBSERVATORY/
NSF/AURA





Click to edit master title style





1 year later on Kitt Peak

CREDIT: RUBIN
OBSERVATORY/
NSF/AURA

- Crews and contractors required to convoy up and down highway 386 until guardrails completed
- alternate internet provided until fiber connections were repaired
- Accountability of all staff and contractors has remained a priority
- Strengthened relationships between KPNO and local fire agency's
- Fuel reduction plans and work underway currently
- wildfire mitigation and prevention became a major priority for Kitt Peak.





Thanks and appreciation to the Eastern Area Fire management team, Tohono O'odham office of Emergency Services, Department of Forestry, the 100 firefighters on Kitt Peak that week, Tohono O'odham Utility, and all the employees/contractors at Kitt Peak for their resiliency that returned our observatory operations to normal.

Questions?