



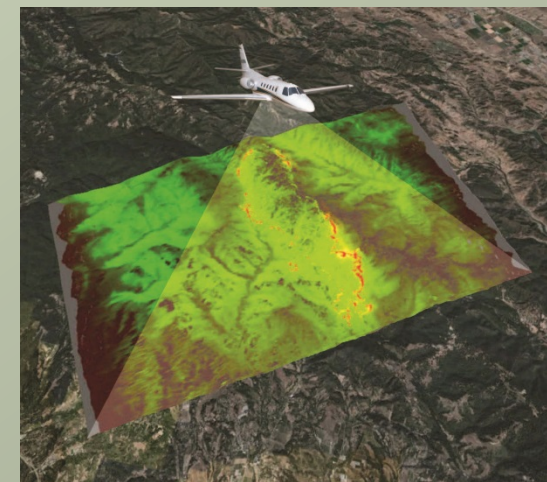
# National Infrared Operations Update

TFRSAC Spring 2018

Tom Mellin,  
National Infrared Program Manager

## NIROPS Platforms & Systems

- 2 FS aircraft
- 3 Phoenix Imaging Systems
  - 2 thermal bands (3-5 $\mu\text{m}$ , 8-12 $\mu\text{m}$ )
  - 120° field of view
  - 6 mile swath at 10,000 ft AGL
  - Ortho-imagery delivered via Aircell
  - Can image 300,000 acres per hour
- Supplemental support via Aircraft 3
- Service ordered by the incident



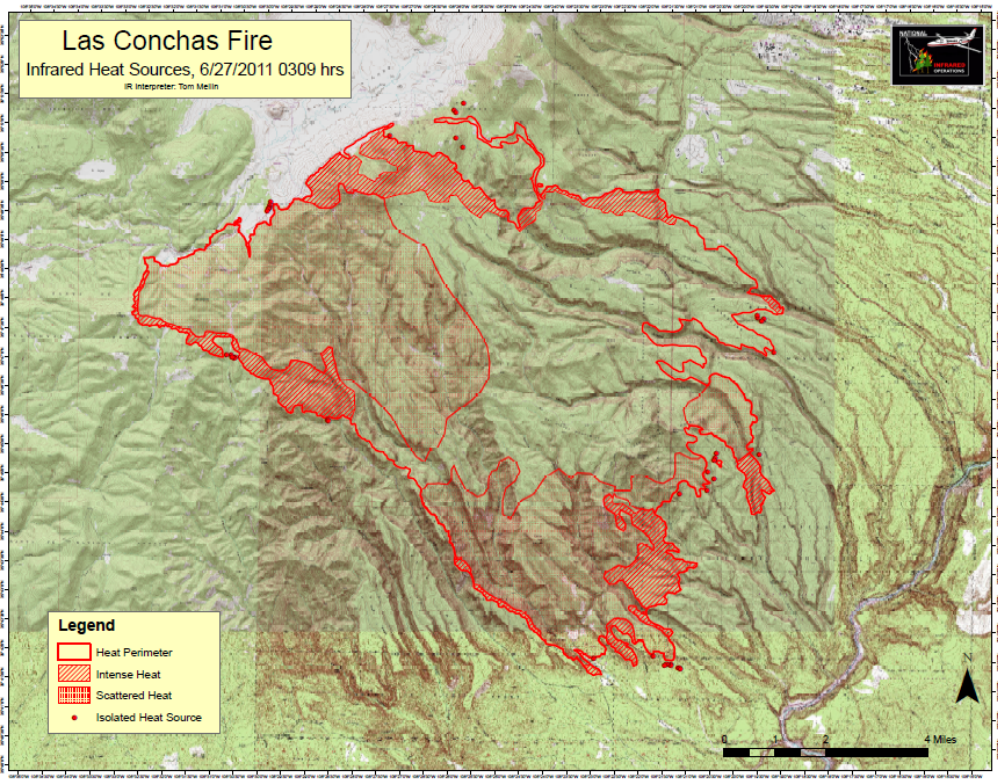
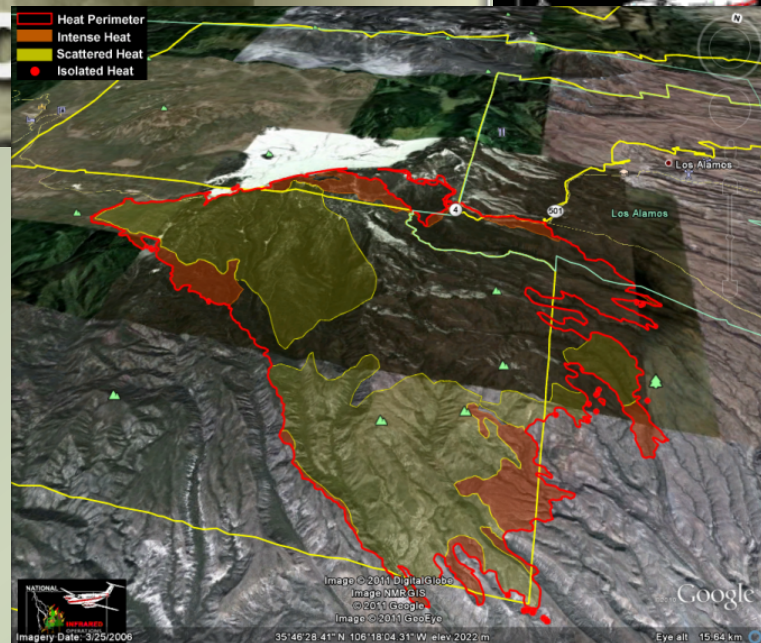


## Products Delivered to Incident daily

Shapefiles, map, kmz, log

**Layers**

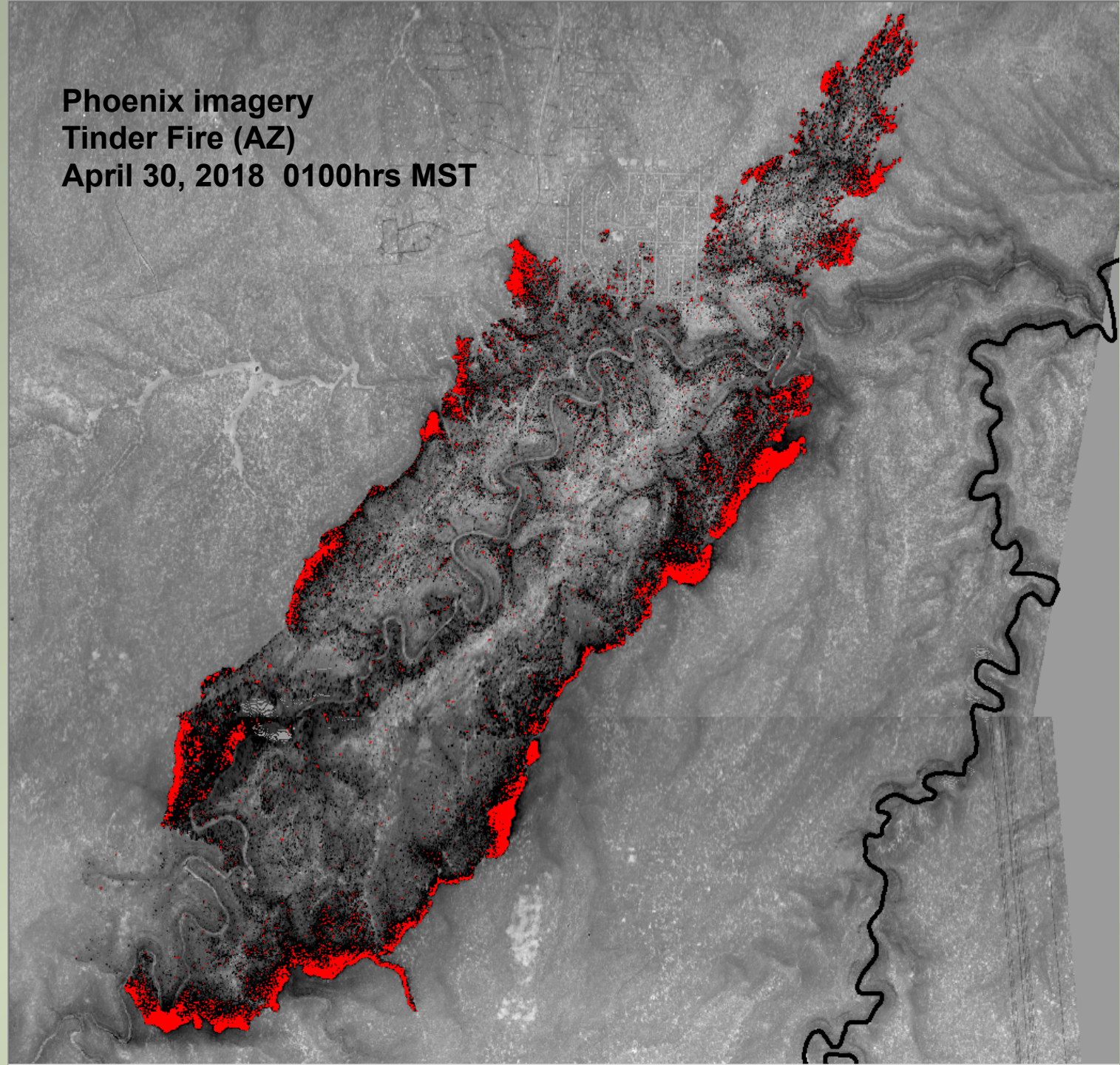
- Isolated Heat Source
- Heat Perimeter
- Intense Heat
- Scattered Heat



INFRARED INTERPRETER'S DAILY LOG			
Incident Name: <b>Las Conchas</b>	IR Interpreter(s): <b>Tom Mellin</b>	Local Dispatch Phone: <b>505-438-5600</b>	Interpreted Size: <b>43,623 acres</b>
Flight Time: <b>0309</b>	Flight Date: <b>06/27/2011</b>	Interpreter(s) location: <b>R3 RO</b>	Growth last period: <b>n/a</b>
	Interpreter(s) Phone: <b>505-301-8167</b>	Regional Coordinator: <b>Tom Mellin</b>	National Coordinator Phone: <b>505-301-8167</b>
Ordered By: <b>Reinartz IMTI</b>	Order Number: <b>[REDACTED]</b>	Aircraft/Scanner System: <b>149Z</b>	Pilots/Tech: <b>Johnson/Berain</b>
IRIN Comments on imagery: 6 runs, only 5 that covered fire, all different directions, crew did great job to cover all the fire, orthorectification good, lots of sensor saturation and hot gasses		Weather at time of flight: <b>clear</b>	Flight Objective: <b>provide first perimeter for fire</b>
Date and Time Imagery Received by Interpreter: <b>06/27/2011 0400</b>		Type of media for final product: <b>shapefiles, kmz, pdf map</b>	
Date and Time Imagery Delivered to Incident: <b>06/27/2011 0600</b>		Electronic file sent to: <b>ftp://ftp.nfic.gov/incident_Specific_Data/SOUTHWEST/2011_Incidents/Las_Conchas/IR/20110627/</b>	
<p><i>Comments/notes on tonight's mission and this interpretation:</i> This was the first look at the fire with no other initial perimeter to go on. Rough perimeter posted at 0500, then rest of shapefiles plus new perimeter posted later. On NE edge intense heat is 0.3 miles from Water Canyon and Ponderosa Campground. Area of Intense heat in Frijoles Canyon just south of Burnt Mesa. On SE edge of fire Intense heat in Capulin Canyon, Intense heat has reached San Miguel ruins, Sanchez Canyon, Eagle Canyon, and Cochiti Canyon, and up on Horn Mesa. On SW edge, intense heat is almost to Woodard Ridge. West edge of fire is 0.3 miles from Los Griegos and 0.7 miles from Cerro Pelado Lookout. On Northern edge, heat has crossed North of Route 4 just East of Las Conchas Campground but still south of East Fork of the Jemez. Mostly the heat is south of Route 4. Isolated heat sources north of burnout are suspect and should be checked.</p>			

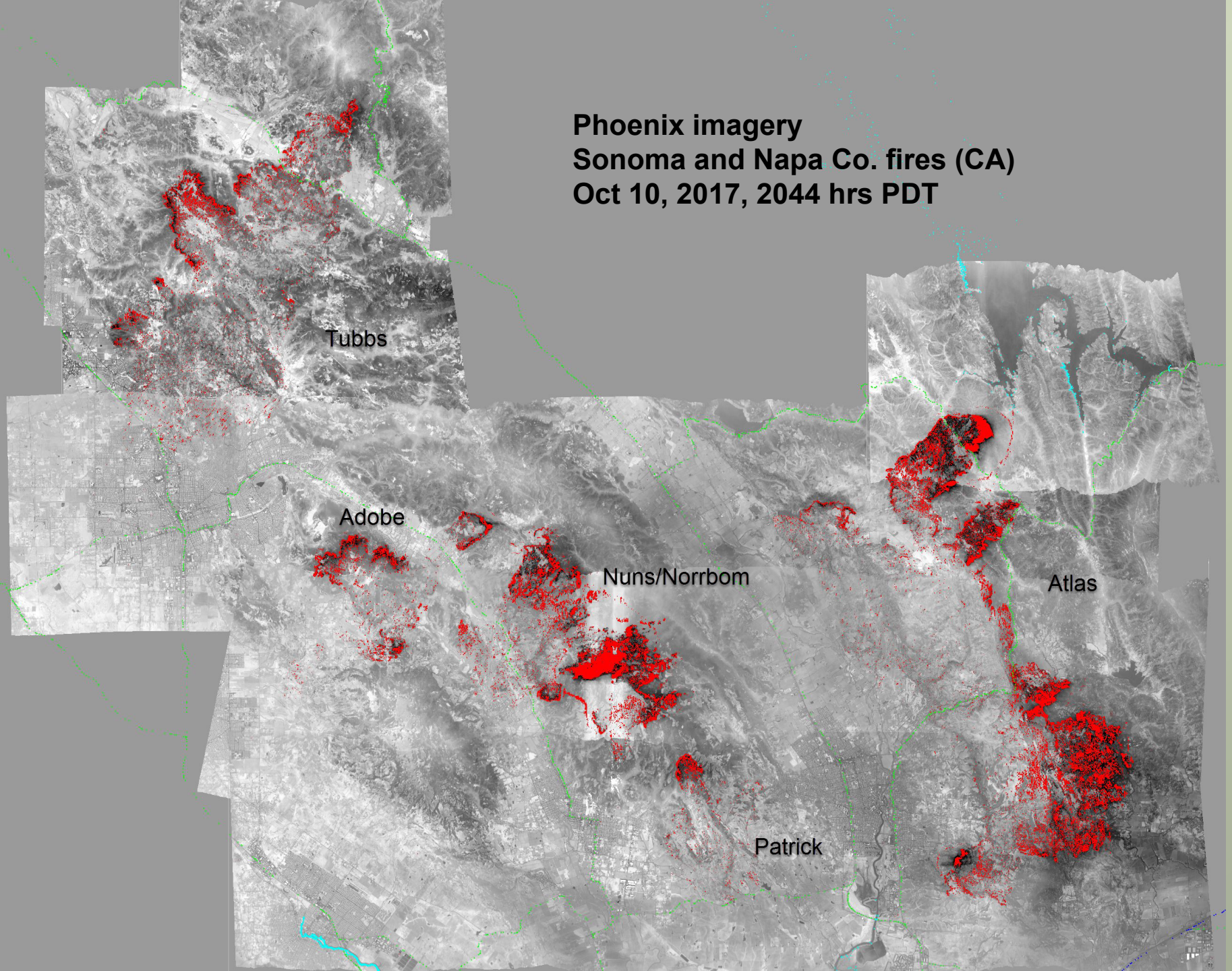


**Phoenix imagery  
Tinder Fire (AZ)  
April 30, 2018 0100hrs MST**





**Phoenix imagery  
Sonoma and Napa Co. fires (CA)  
Oct 10, 2017, 2044 hrs PDT**





## 2017 –

- 10.03 million acres burned, 153% of the ten year average (2007-2016)
- Went to PL4\* on July 9, dropped to PL3 on September 22
- Included 39 days at PL5
- Early start – April 17 in FL & GA
- End – Dec 24 in SoCal



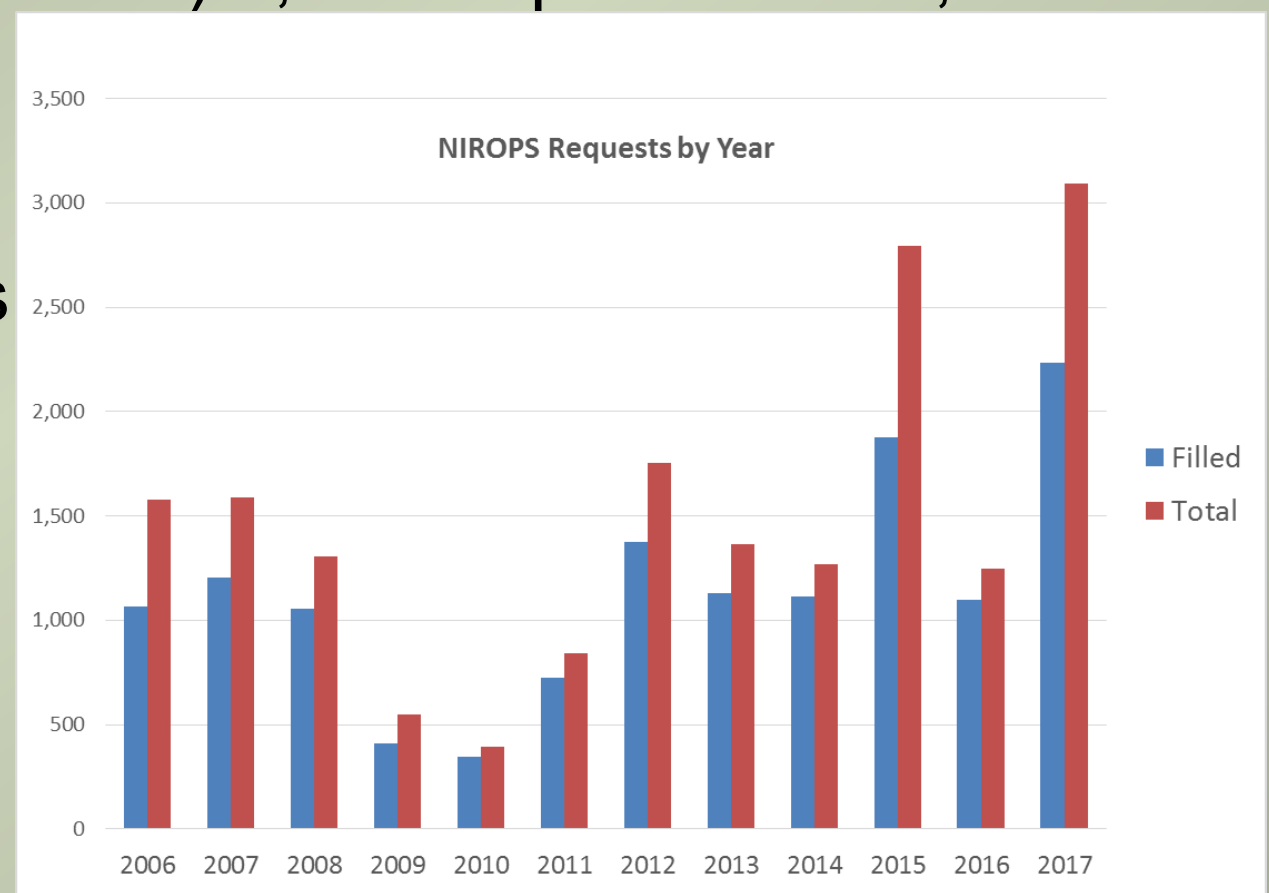
\*PL = Preparedness Level





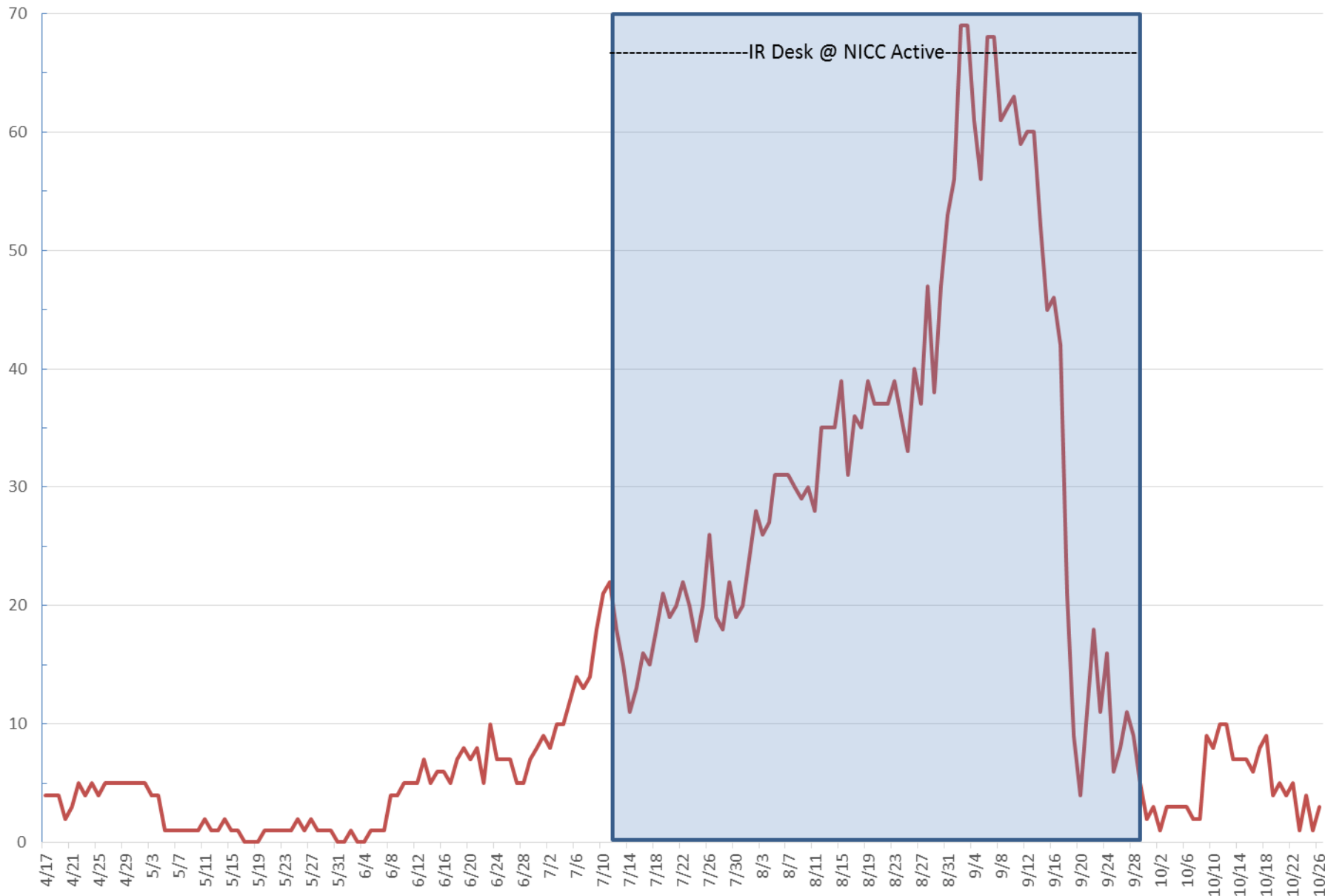
## 2017 NIROPS Requests

- 3,092 total requests with 2,232 filled
- 10 yr avg (2007-2016) 1,310 requests and 1,033 filled
- 28% UTF rate
- Aircraft 3 filled
- 13% of missions (28% in 2015)



Updated 1/5/18

# NIROPS requests, 4/17- 10/26, 2017





## Busiest Night 2017 – 9/1/17, 48 Fires

### ● N144Z (29 fires)

- North Fork Hughes, Hanover, Honeymoon, Hidden, IbeX, Bearskin, Highline (ID)
- Sapphire Cx, Meyers, Sprague, Rice Ridge, Park Creek, Reader, Highway 200 Cx, Liberty, Nelson Creek, Lolo Peak, Gibraltar Ridge, Alice Creek, Caribou, Monahan, Deep Creek, Sheep Gap, Strawberry, Scalp, Reef, Crucifixion Creek (MT)
- Pole Creek (WY)
- Bridge Creek (WA)

### ● N149Z (13 fires)

- Whitewater, Staley, Horse Prairie, Milli 0843 CS, Miller Cx, Jones, Indian Creek, Chetco Bar (OR)
- Helena, Salmon August Cx, Eclipse Cx, Orleans Cx (CA)

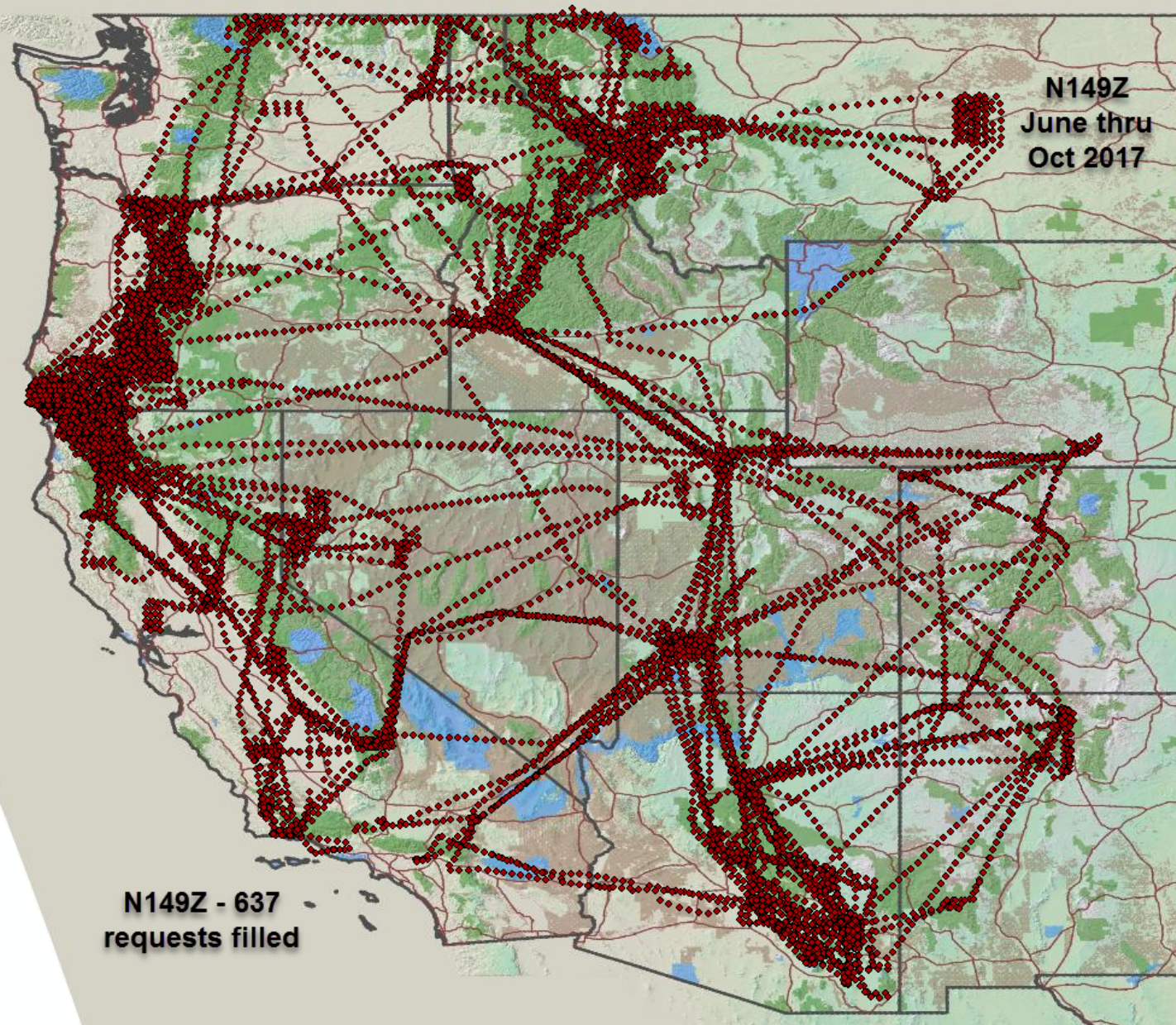
### ● Aircraft 3 (6 fires)

- Jolly Mountain, Norse Peak (WA)
- Railroad, Pier, Ponderosa (CA)
- Sartin Draw (MT)

2015 Busiest night was 8/19 with 47 fires flown,  
26 by 144Z, 16 by 149Z, 5 by AC3



# NATIONAL **INFRARED** OPERATIONS



N149Z  
June thru  
Oct 2017

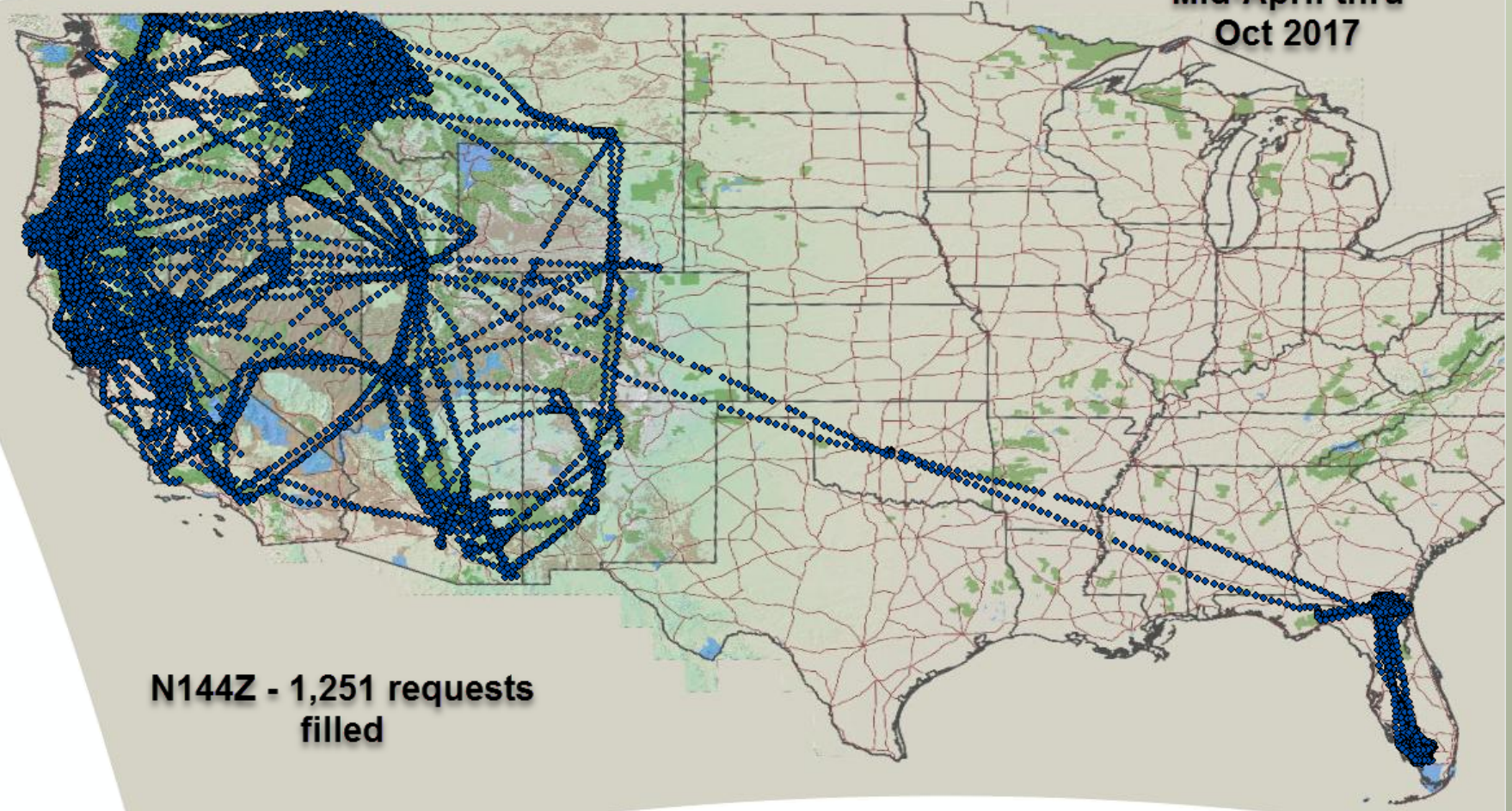
N149Z - 637  
requests filled



# NATIONAL INFRARED OPERATIONS



**N144Z**  
Mid-April thru  
Oct 2017

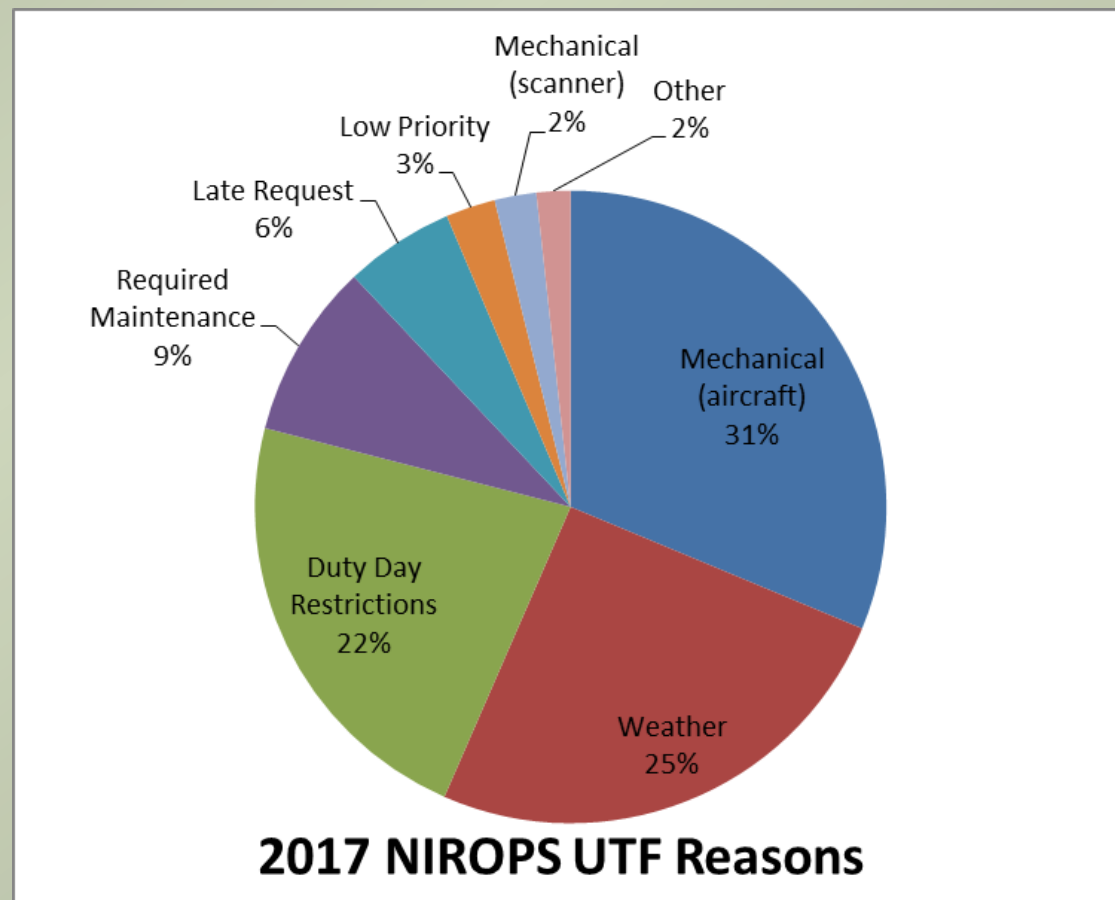


**N144Z - 1,251 requests  
filled**



## UTFs (Unable to Fill)

- 749 total UTFs (NIROPS only)
- UTF rate drops from 28% to 21% when weather UTFs are not counted
- UTF for Aircraft 3 - 27% (19% non-weather)



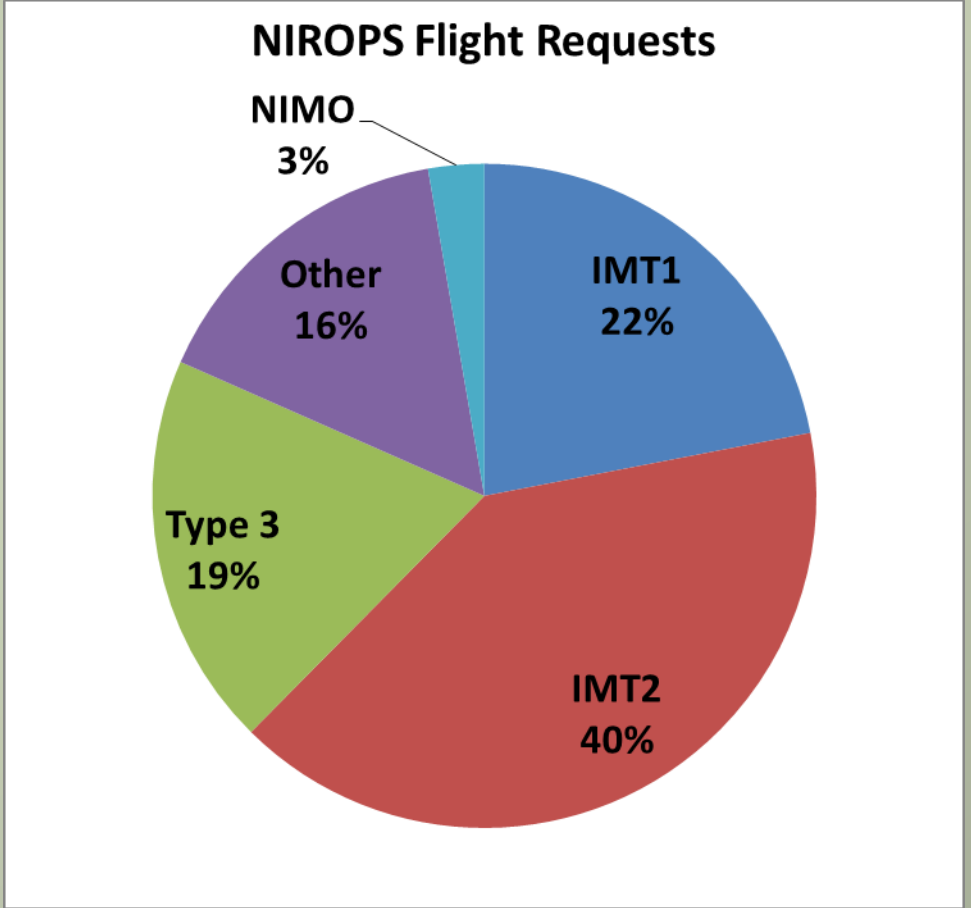




## Who is Requesting?

- 131 orders did not fill out (out of 3,057)

Team Type	non-weather UTF rate
Other	25%
Type 3	26%
Type 2	17%
Type 1	15%
NIMO	28%





## Extended Support to numerous incidents

- Lolo Peak (MT) – 52 flights
- Park Creek (MT) – 51 flights
- Chetco Bar (OR) – 50 flights
- Miller Cx (OR) – 48 flights
- Sunrise (MT) – 48 flights
- Sapphire Cx (MT) – 45 flights
- Liberty (MT) – 43 flights
- Rice Ridge (MT) – 43 flights
- Meyers (MT) – 34 flights
- Highline (ID) – 30 flights





## It Takes a Team!

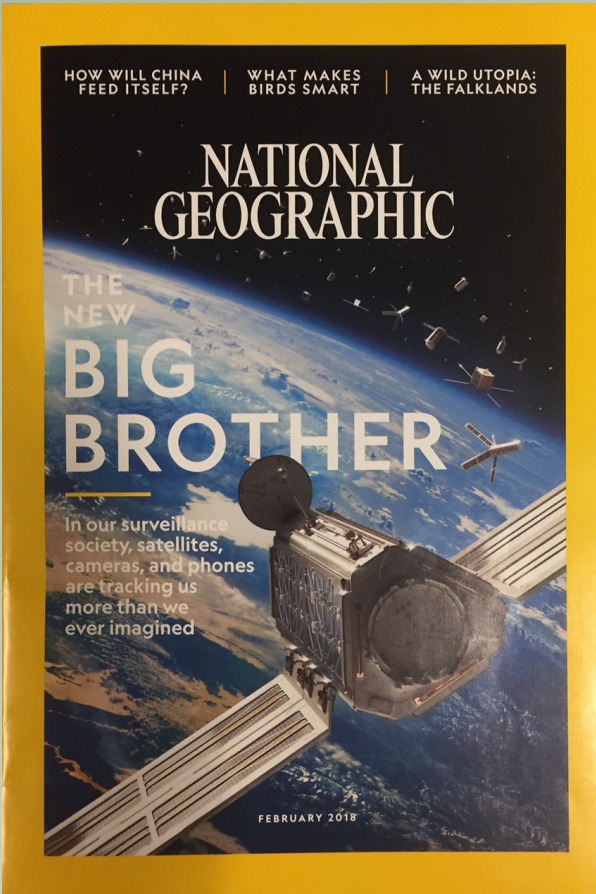
- IR Techs - 5 person rotation
- Pilots – 6 FS fulltime
- 44 different IRINs, 6 trainees got assignments and 5 got signed off
- National IR desk staffed from 7/12 to 9/29 by 5 different IRCNs
- Aircraft 3 (Firehawk) coverage key during maintenance on NIROPS aircraft- AC3 liaison at GTAC and NGA/USGS/FS analysts
- R4 Aviation maintenance crew

## Takeaways from 2017

- Unprecedented demand
- Planes are getting old!
  - 149Z – 33 years old (1985)
  - 144Z – 17 years old (2001)
- When best to utilize other IR resources
  - Small fires, initial attack, wide area detection for new starts
  - Fire cooling down, mostly hot spot detection
  - Daytime flights, portions of large fires
- Other IR resources are complementary to NIROPS but don't replace our capacity and products



# NATIONAL INFRARED OPERATIONS



## Questions?

