

An aerial photograph of a volcanic landscape. The terrain is dark and rugged, with several bright, glowing orange and yellow lava flows. The lava flows are concentrated in the upper left and right portions of the image, with some smaller flows in the lower left and center. The overall scene is dramatic and intense, capturing the raw power of a volcanic eruption.

NIROPS 2012 Closeout

- The Phoenix IR System
 - Engineering Team
 - Woody Smith (Ring Leader)
 - Charles Kazimir (Kaz)
 - Bill Forsyth (Hawaiian Bill)
 - Dave Chamberlain (Super Dave)

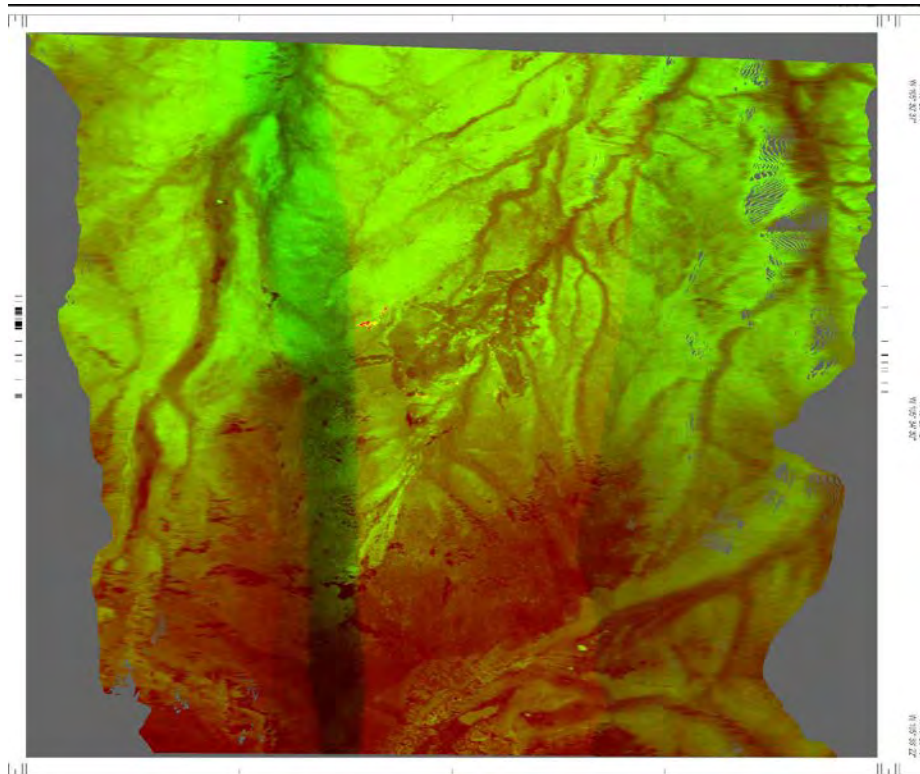
2012 Technician Statistics

- Total Technician Hours were 1059.19 hours
- Total Technician Days were 270 Days
- Total Technician Missions were 1426
- Almost 2x more hours/missions than each of the last 5 years.

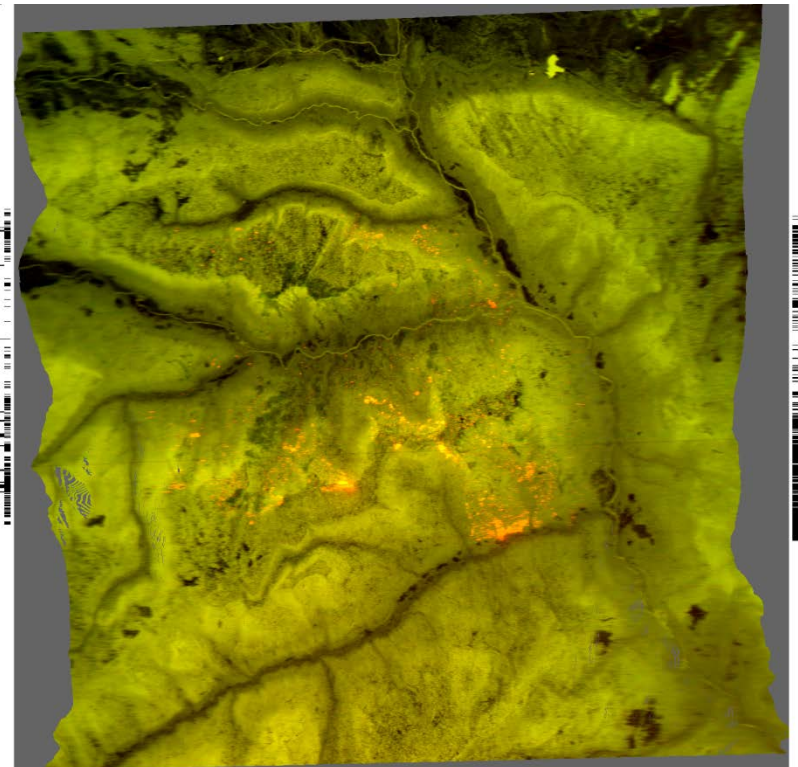
Milestones

- Stabilized and cleaned up signals
 - More gain = better sensitivity, clearer image
 - Fixed issues with clamp
 - Fixed issues with zig-zag images caused by cold spike
 - developed new timing circuit and pulse shaper
 - Fixed racing stripe in color imagery
- New fire detection and curve fit calibration
 - More reliable sub-pixel heat detection

Eliminated Zig Zag artifacts & Racing stripe

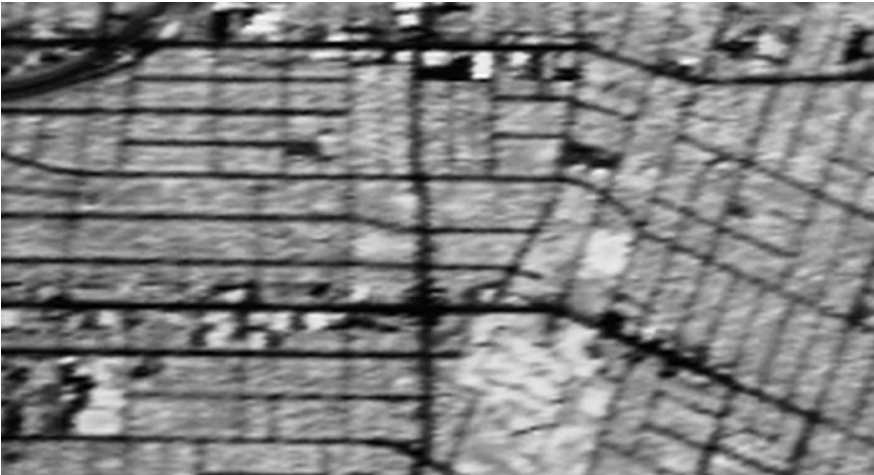


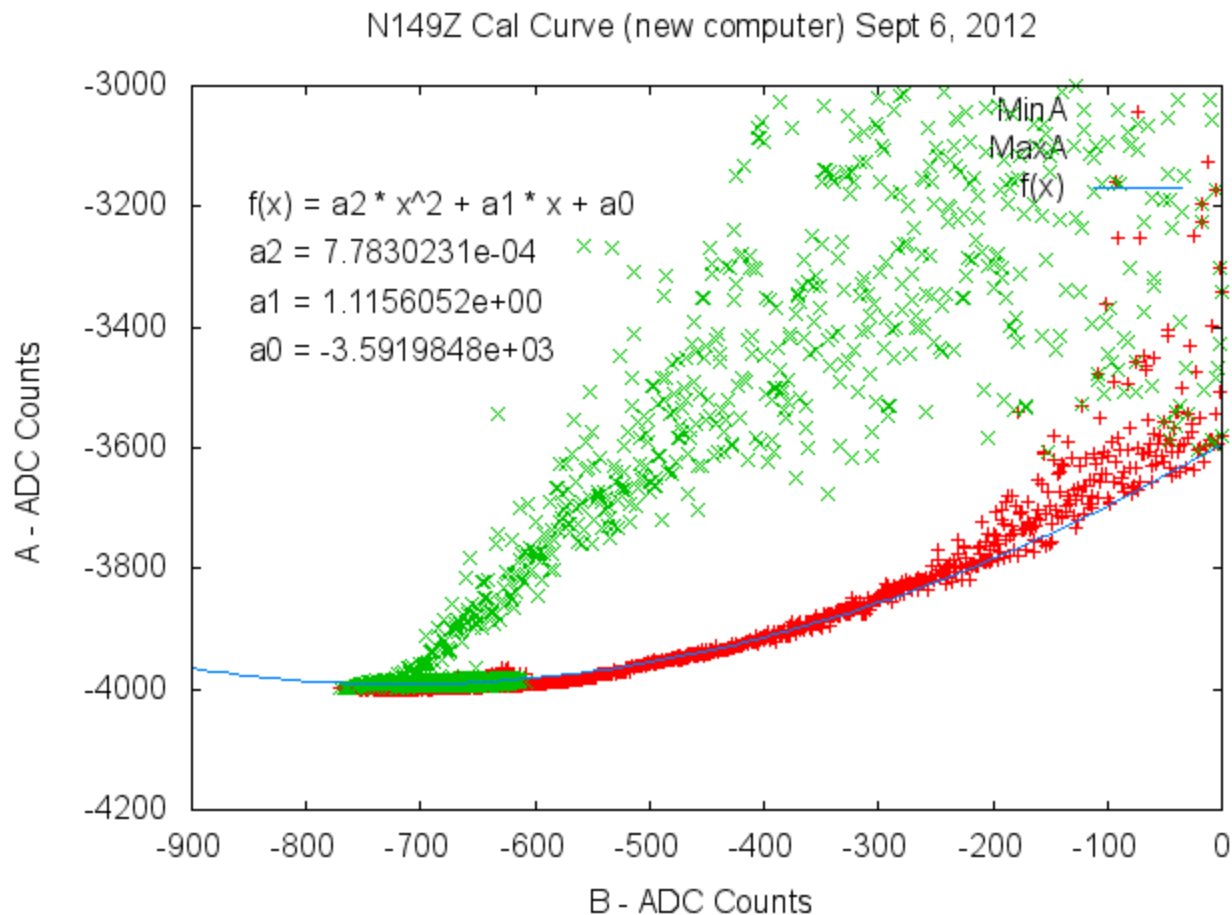
START ORTHORECTIFICATION -- 100630_0133_COW_CREEK_1 -- HEADING: 89



Imagery With “Zig Zag Edges”

- Image stabilization eliminated the “zig zag edges”





Stanley Hirsch, "Application of Infrared Scanners to Forest Fire Detection",
International Remote Sensing Workshop, May 1971, Ann Arbor, MI
available on NIROPS website

Incident: Pot test (Run 2)

Location: Boise Idaho

Date: October 28, 2011

Altitude: 13500 ft MSL

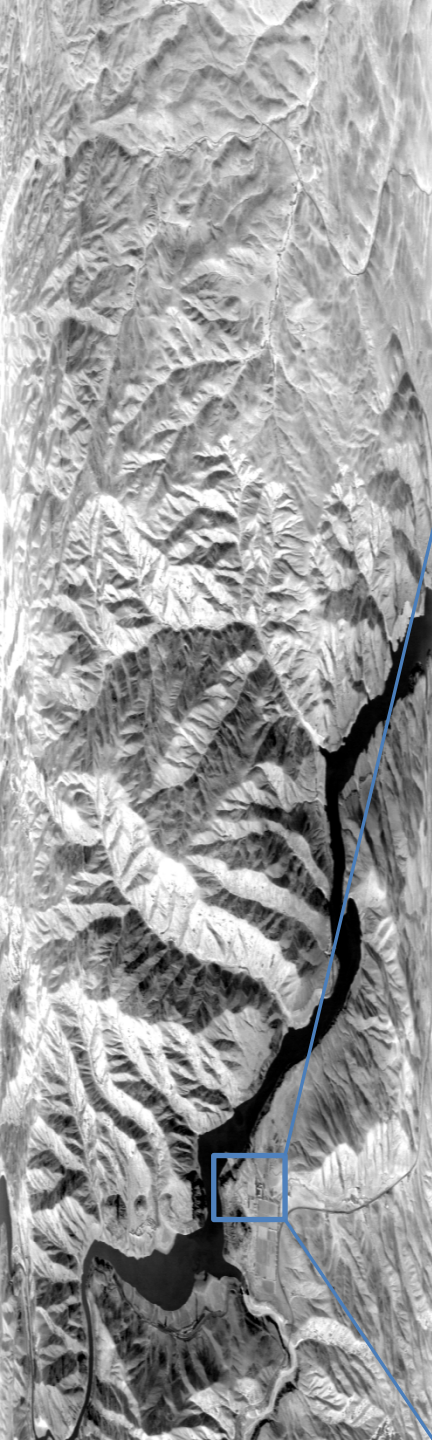
Speed: 270 knots

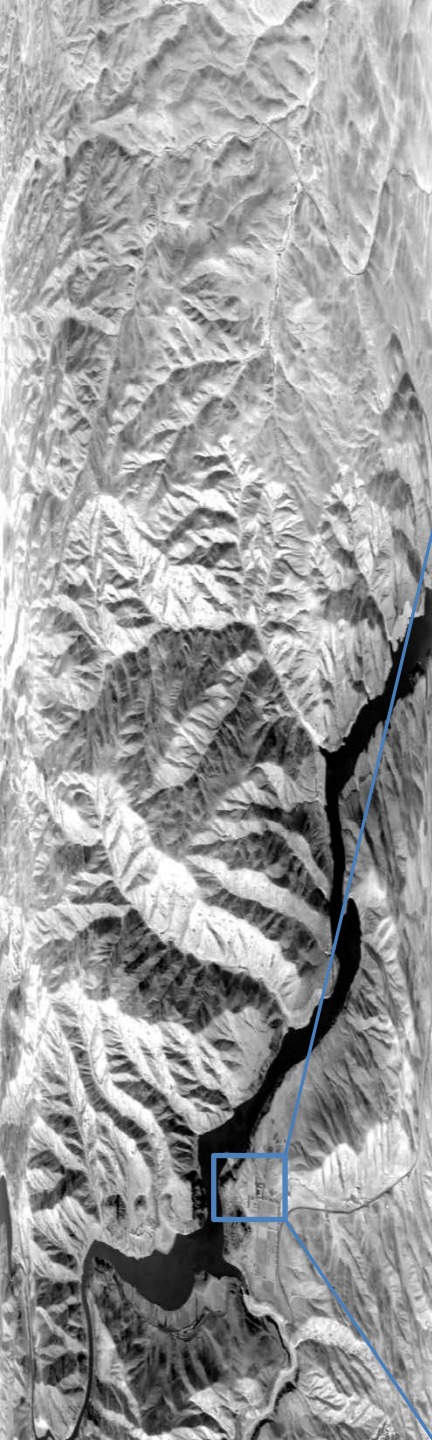
Width : 6.1 miles (5.3 nautical miles)

Length: 8.6 miles (7.5 nautical miles)

Scan time: 1.6 minutes

Coverage: 30k – 35k Acres





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Incident: Little Bear (Run 2)

Location: Ruidoso New Mexico

Date: June 22, 2012

Altitude: 19000 ft MSL

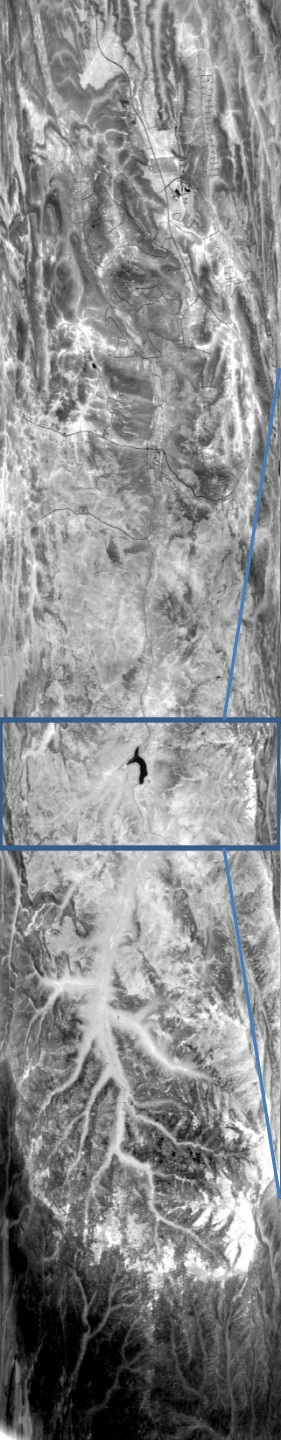
Speed: 270 knots

Width : 8.0 miles (6.9 nautical miles)

Length: 18.4 miles (16.0 nautical miles)

Scan time: 3.4 minutes

Coverage: 80k – 100k Acres



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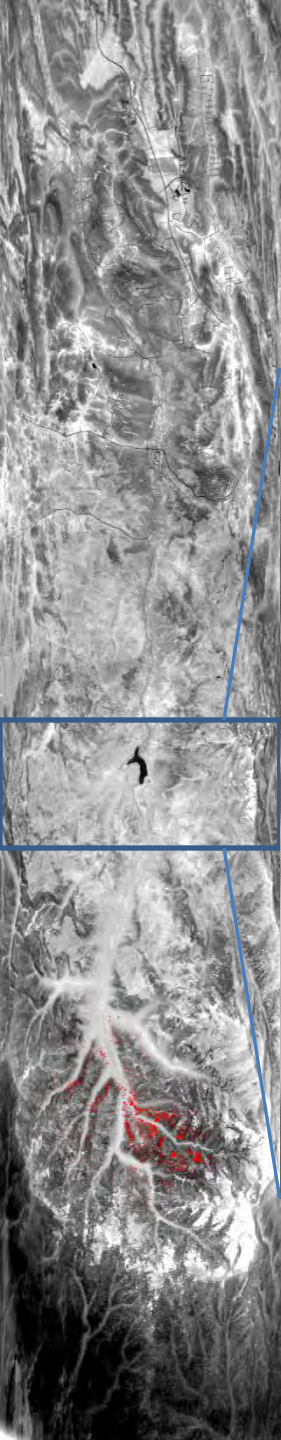
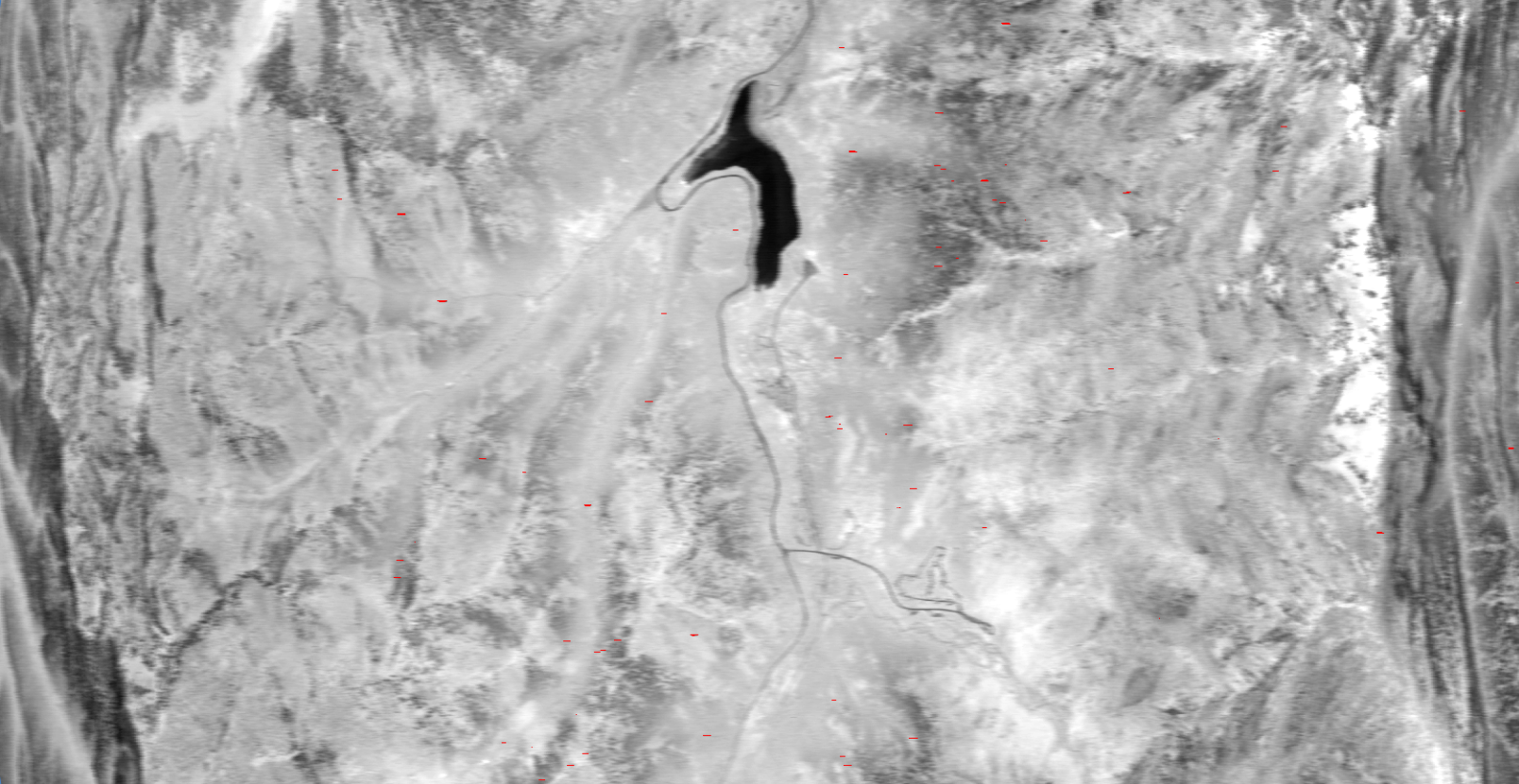
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Ortho products

Incident: Little Bear (Run 2)

Location: Ruidoso NM

Date: June 22, 2012

1000 ft MSL

10 knots

10 miles

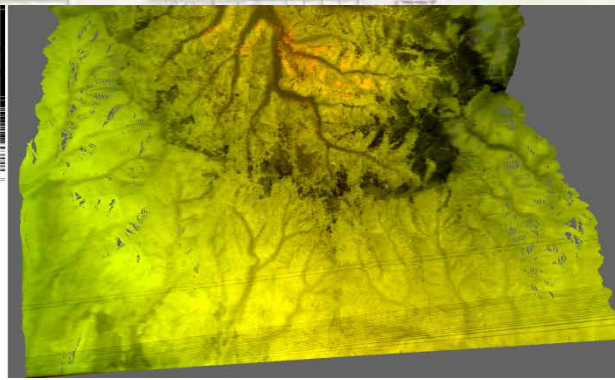
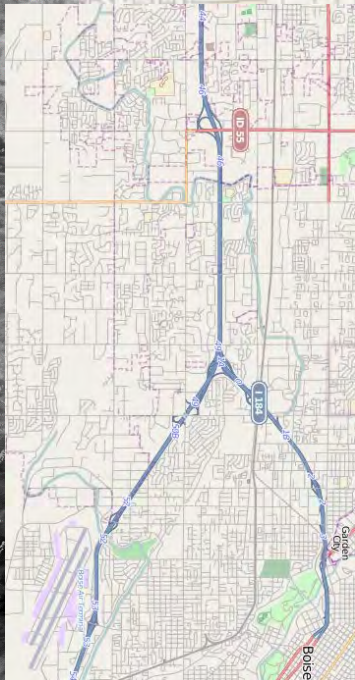
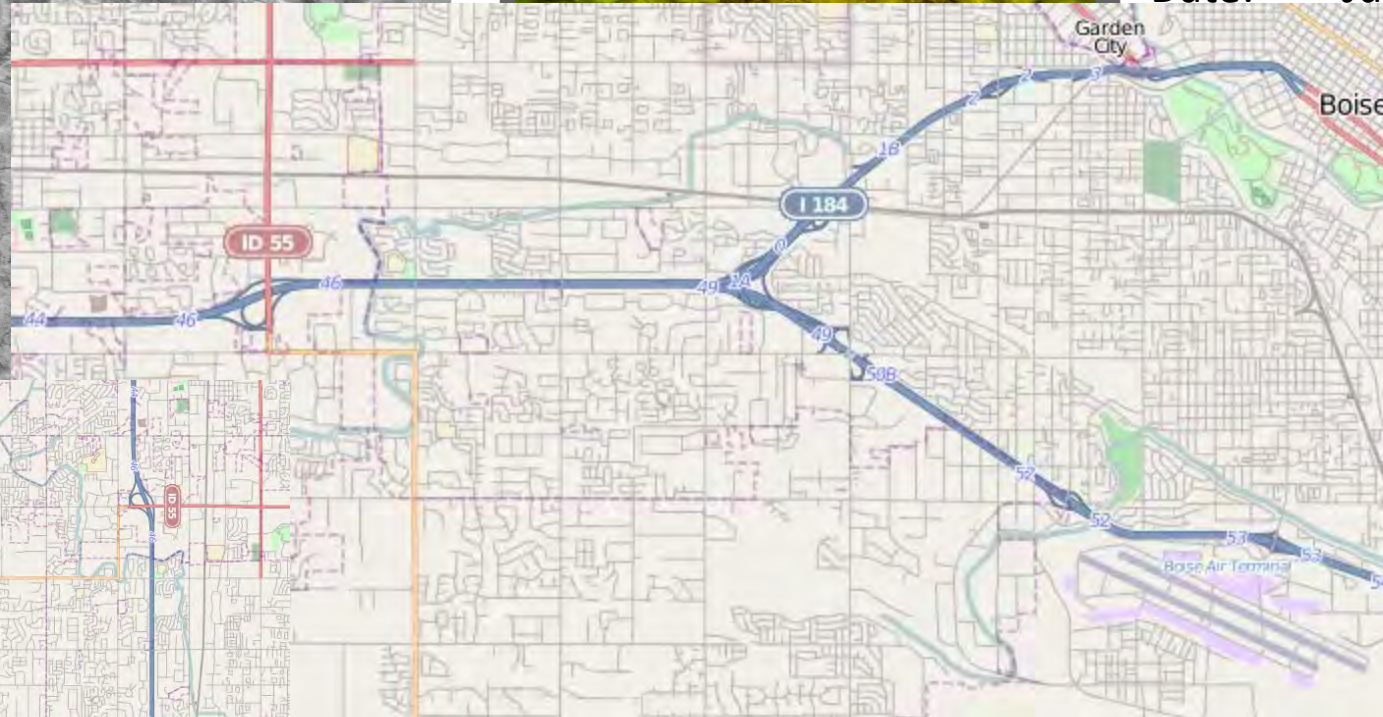
10 miles)

1.4 miles

10 miles)

1.4 minutes

10k – 100k Acres



Incident: Chip (Run 1)

Location: Quincy California

Date: August 5, 2012

Altitude: 15000 ft MSL

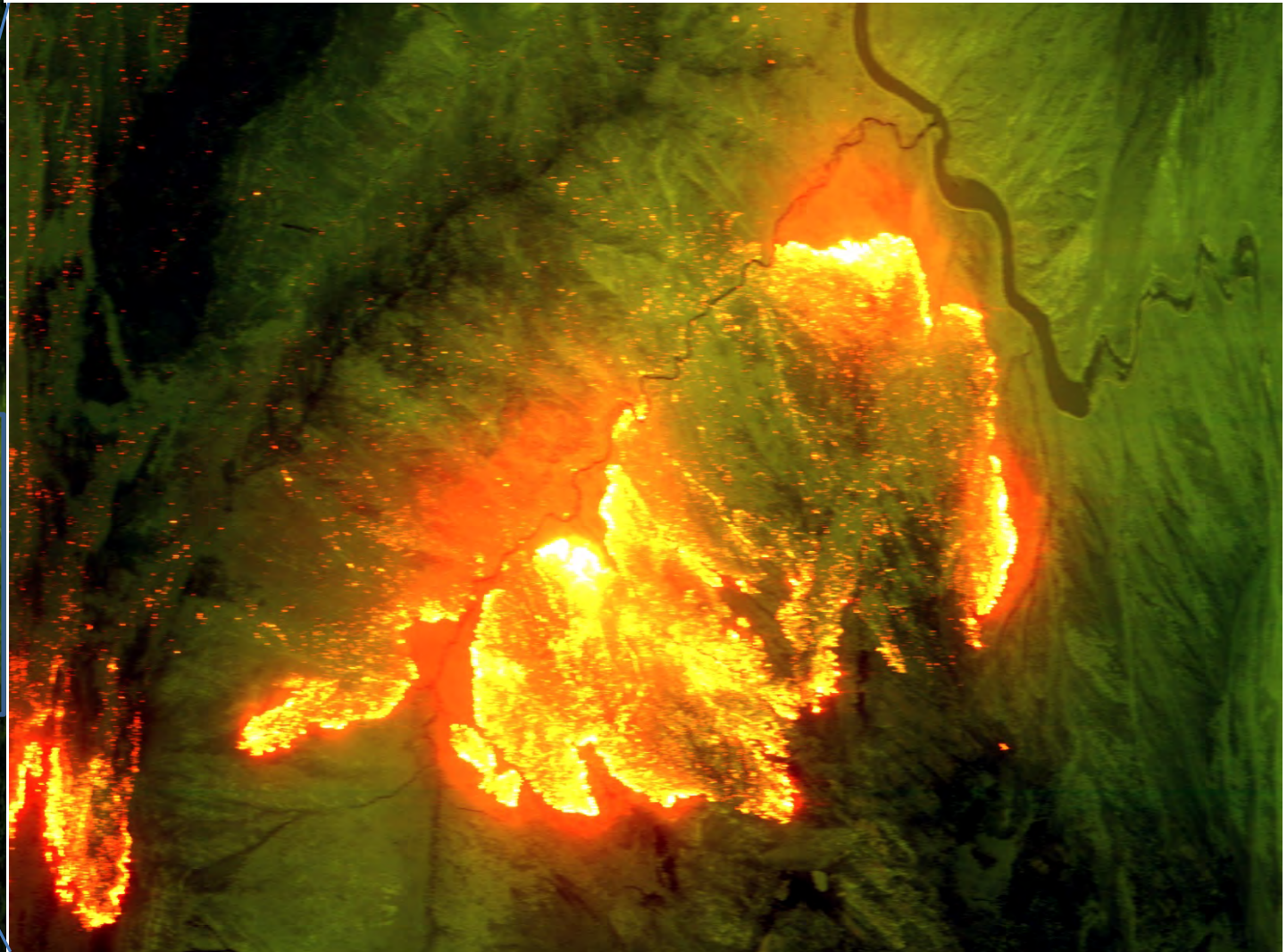
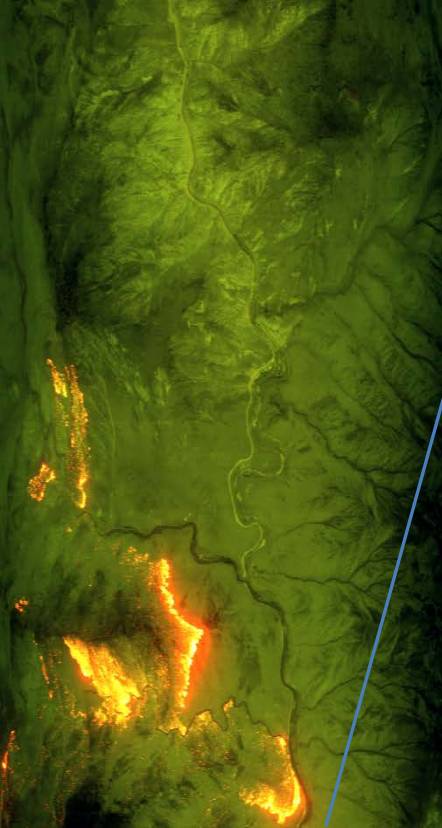
Speed: 270 knots

Width : 6.0 miles (5.3 nautical miles)

Length: 12.0 miles (10.4 nautical miles)

Scan time: 2.3 minutes

Coverage: 40k – 50k Acres



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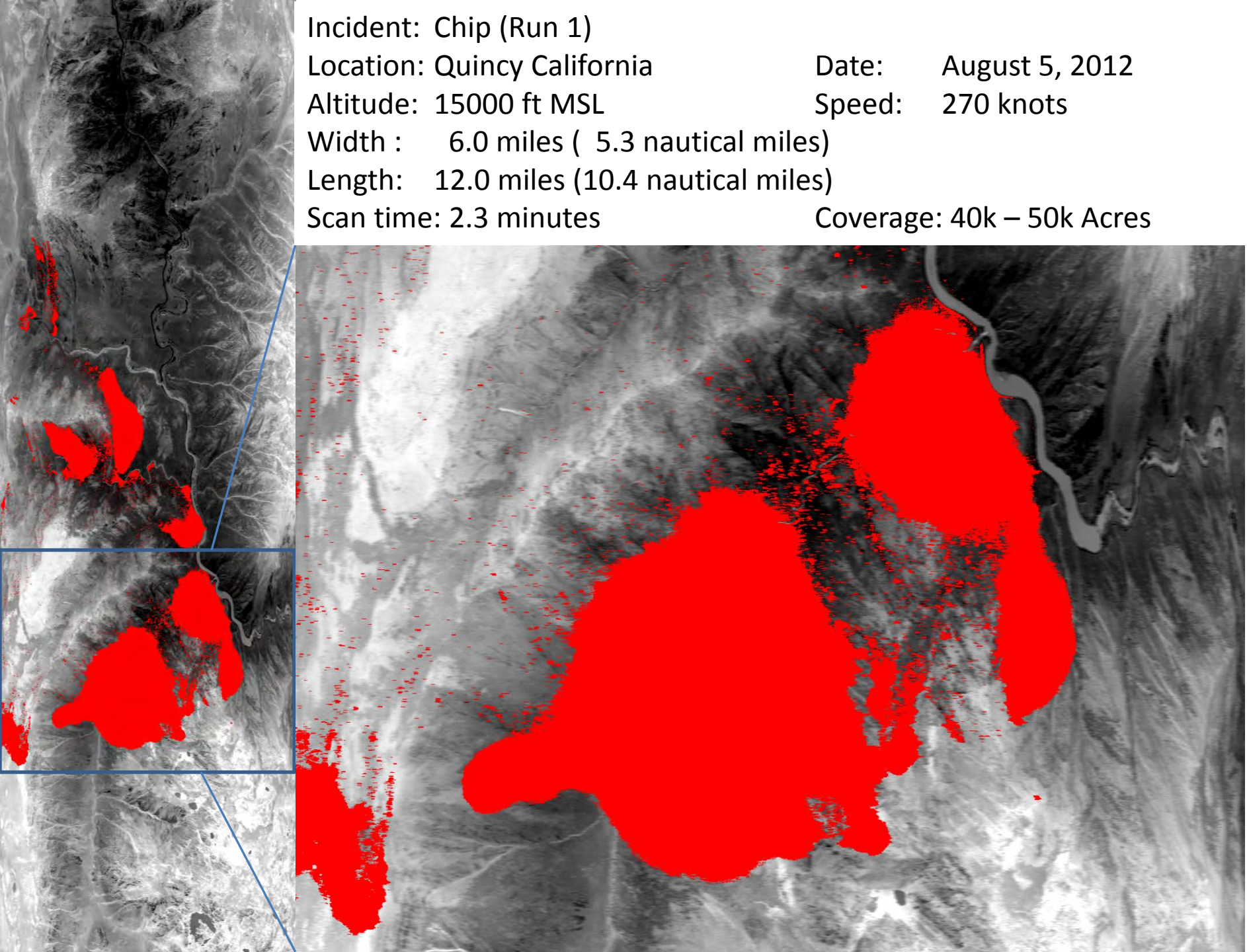
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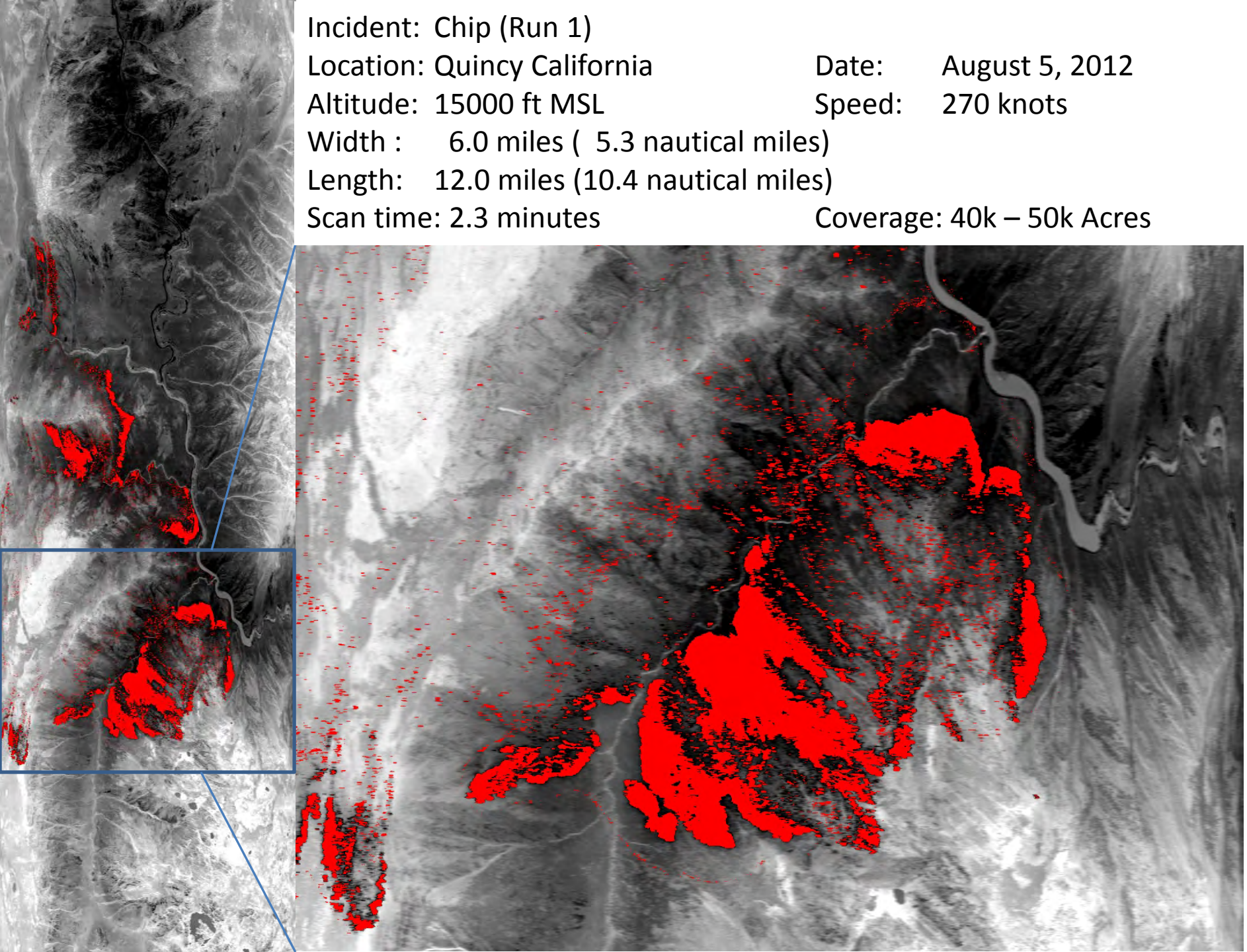
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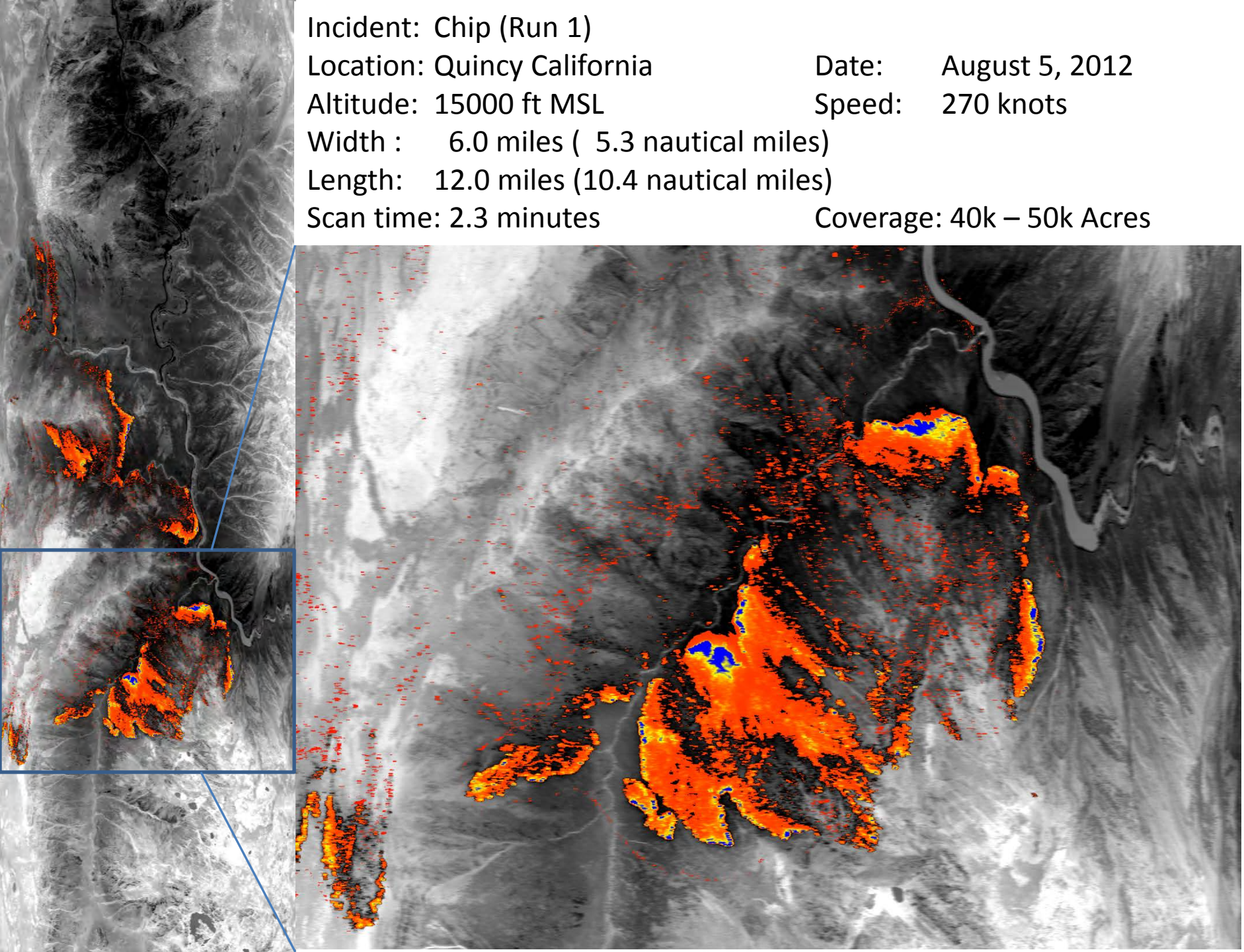
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Continuous Improvement Program

- Optics
- Detectors
- Analog signal chain
- Digital data processing
- Products development
- Delivery
- Quality assurance

IR information sharing

- Facebook Group – Infrared
- FreeArc link - We are using version 0.666
<http://freearc.org/Download.aspx>

download the Windows installer and the

Add-on: FreeArc PowerPack (standard set of external compressors)

FreeArc documentation

<http://freearc.sourceforge.net/index.htm>

Fire Detection

“Saved The Day – Trinity Ridge”

