

# EarthScope's Network of the Americas

## Updates and Current Status



GAGE  
SAGE



EarthScope  
Consortium  
Operated by

# OUTLINE

EarthScope merger status

NOTA regional restructuring and new CA Personnel

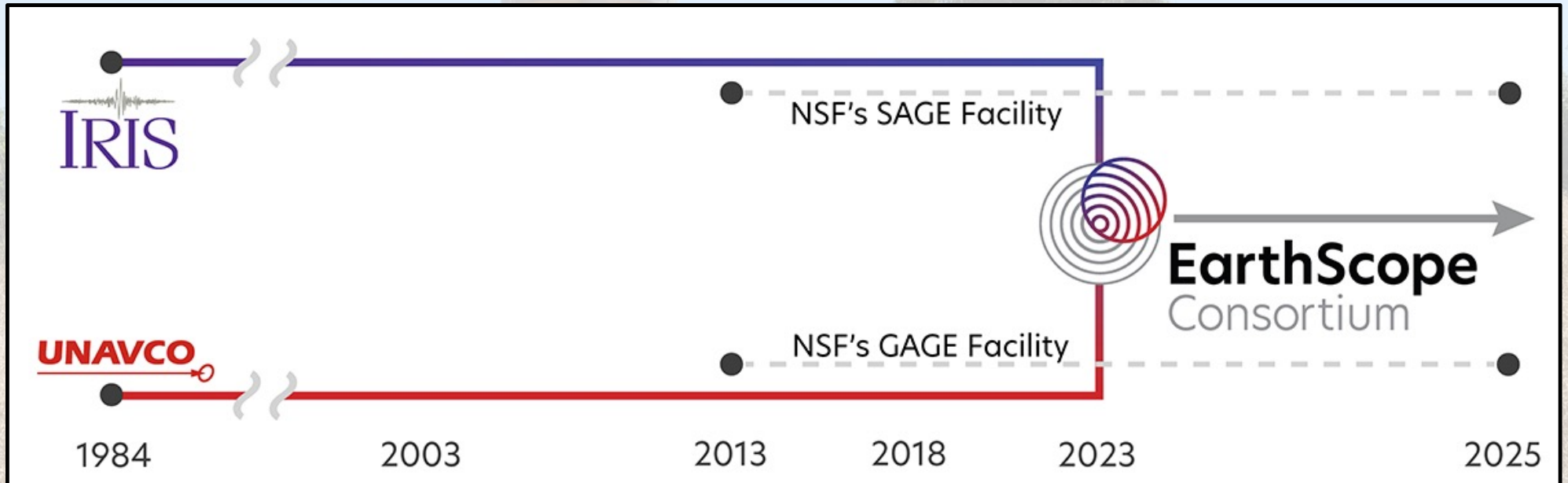
Network Snapshots

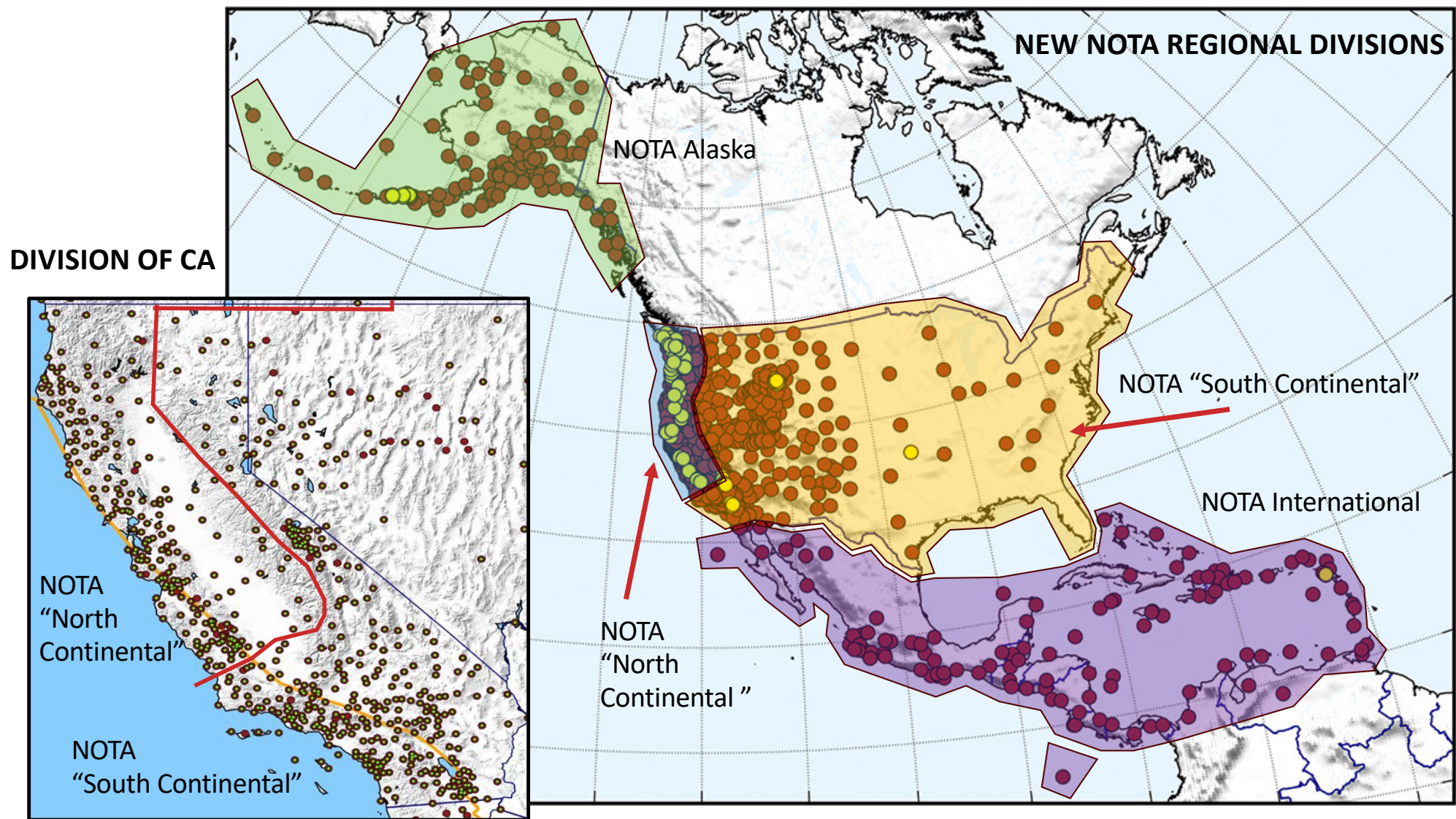
Current station data products

Highlights of current priorities and collaborations



# EARTHSCOPE MERGER STATUS



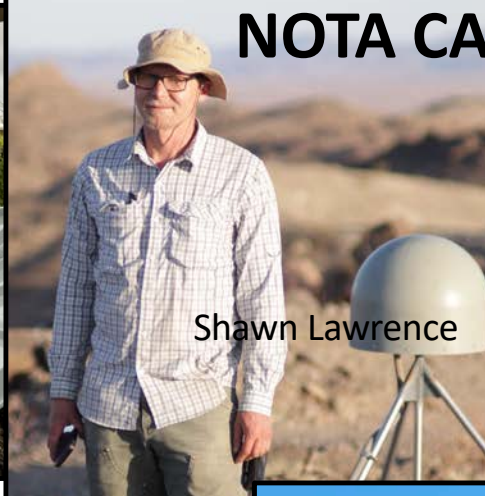


# NOTA CA TEAM

Doerte Mann



Shawn Lawrence



Brendan Hodge



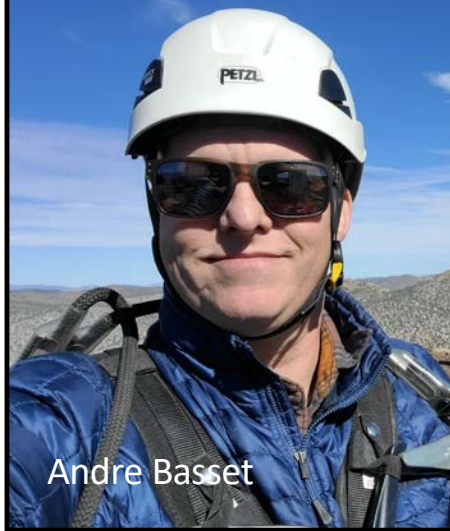
Daniel Diaz



Ken Austin



Andre Basset



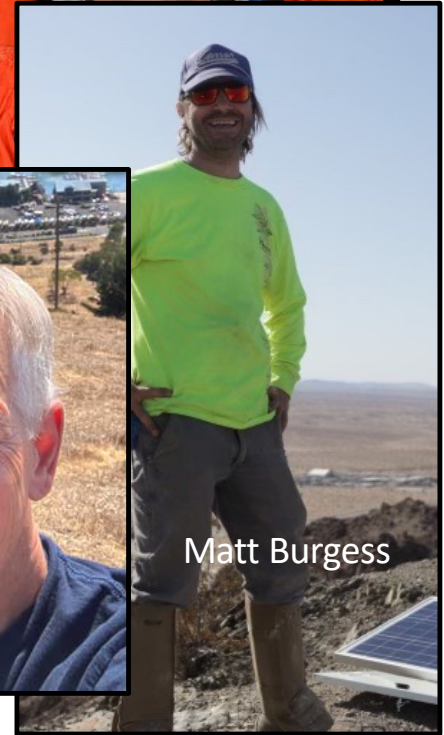
Adam Woolace



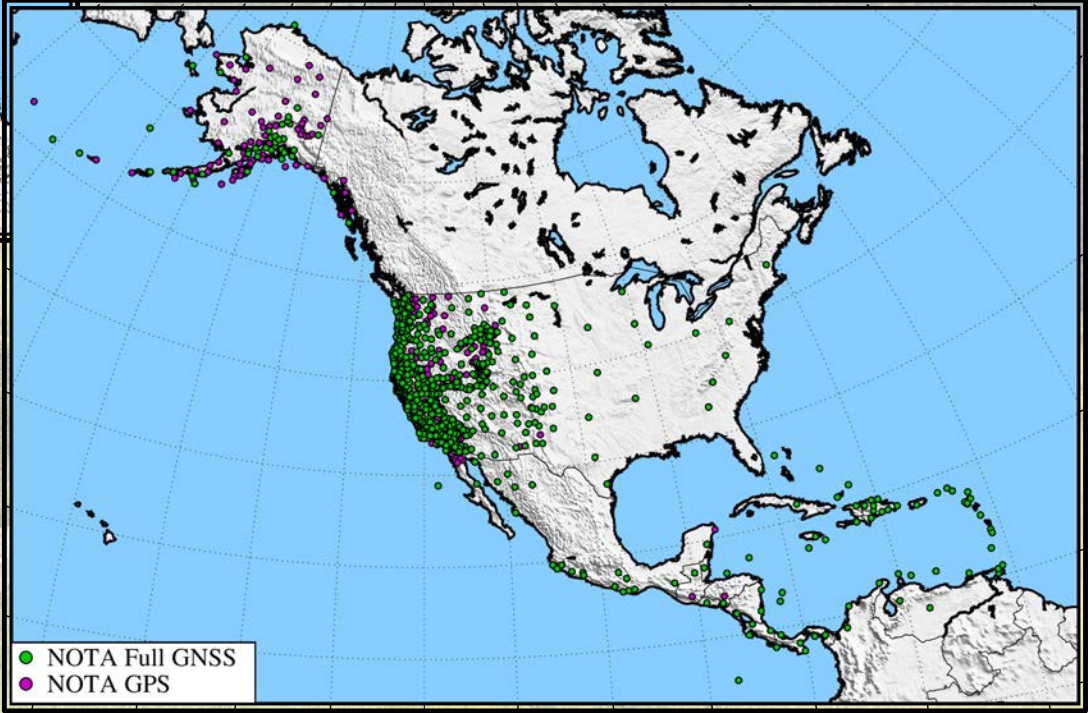
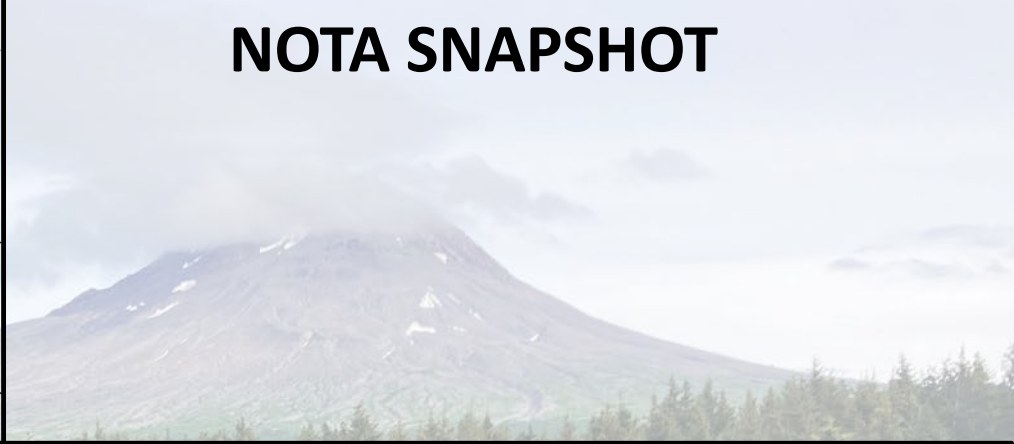
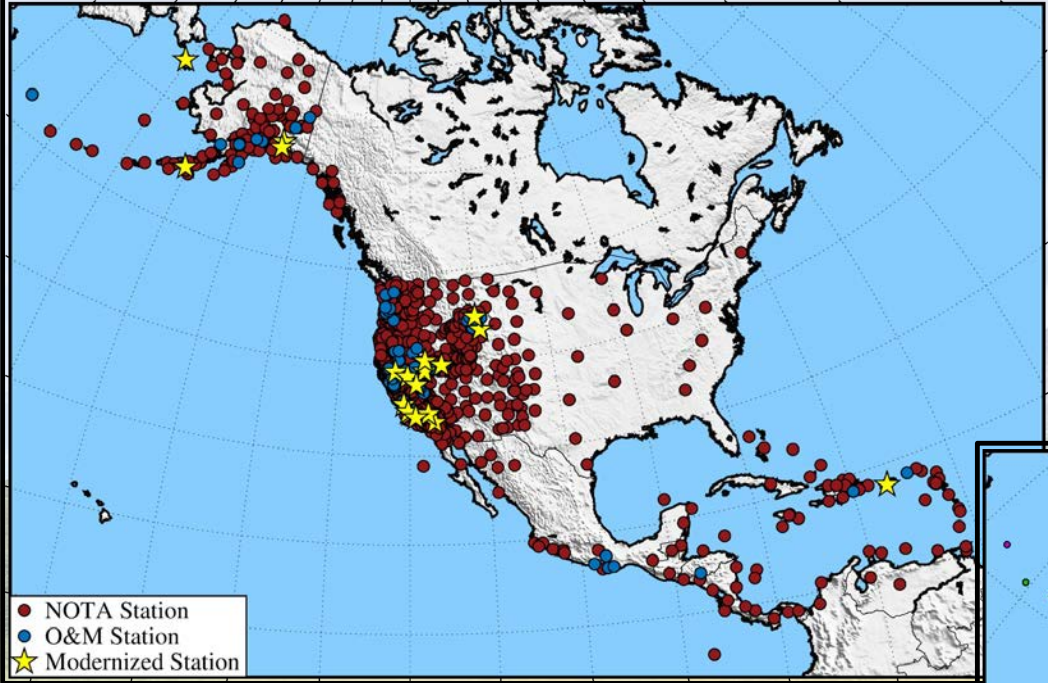
Brett Baker



Matt Burgess



# NOTA SNAPSHOT



Total stations: 1147  
Full GNSS : 832  
Partial GNSS (Receiver OR antenna): 18  
GPS only (Trimble NetRS): 297  
RT stations: 968

# NOTA DATA PRODUCTS

## Data Files

LEVEL	PRODUCT	FREQUENCY	FORMAT	CREATOR
1	Standard Rate (15s)	Daily	RINEX	EarthScope
	High Rate (1, 2, 5 Hz)	Varies	RINEX	EarthScope
	Campaign	Daily, Varies	RINEX	EarthScope
2	Position Solution Time Series	Daily	ASCII, CSV	MIT
	Velocities	Monthly	ASCII	MIT
	Position Offsets	Varies	ASCII	MIT
	Events	Varies	ASCII	MIT
	Tropospheric Parameters	Daily	ASCII	CWU
	Position Solution QA Parameters	Daily, Varies	ASCII	UNR
	Position Solutions (loose)	Daily	SINEX	CWU
	Position Solutions (constrained)	Daily	SINEX	MIT

## Real Time Data

DATA FORMAT	CONSTELLATIONS	SOURCETABLE
BINEX	All-in-view	rtgpsout.unavco.org:2105
RTCM 3.1	GPS, GLONASS (2 signals/band)	rtgpsout.unavco.org:2105
PPP		Currently unavailable

**RT data is broadcast in ITRF08 reference frame**

# CALIFORNIA SNAPSHOT

Total Stations: 542

Full GNSS : 388

Partial GNSS: 11

GPS Only: 143

RT: 526

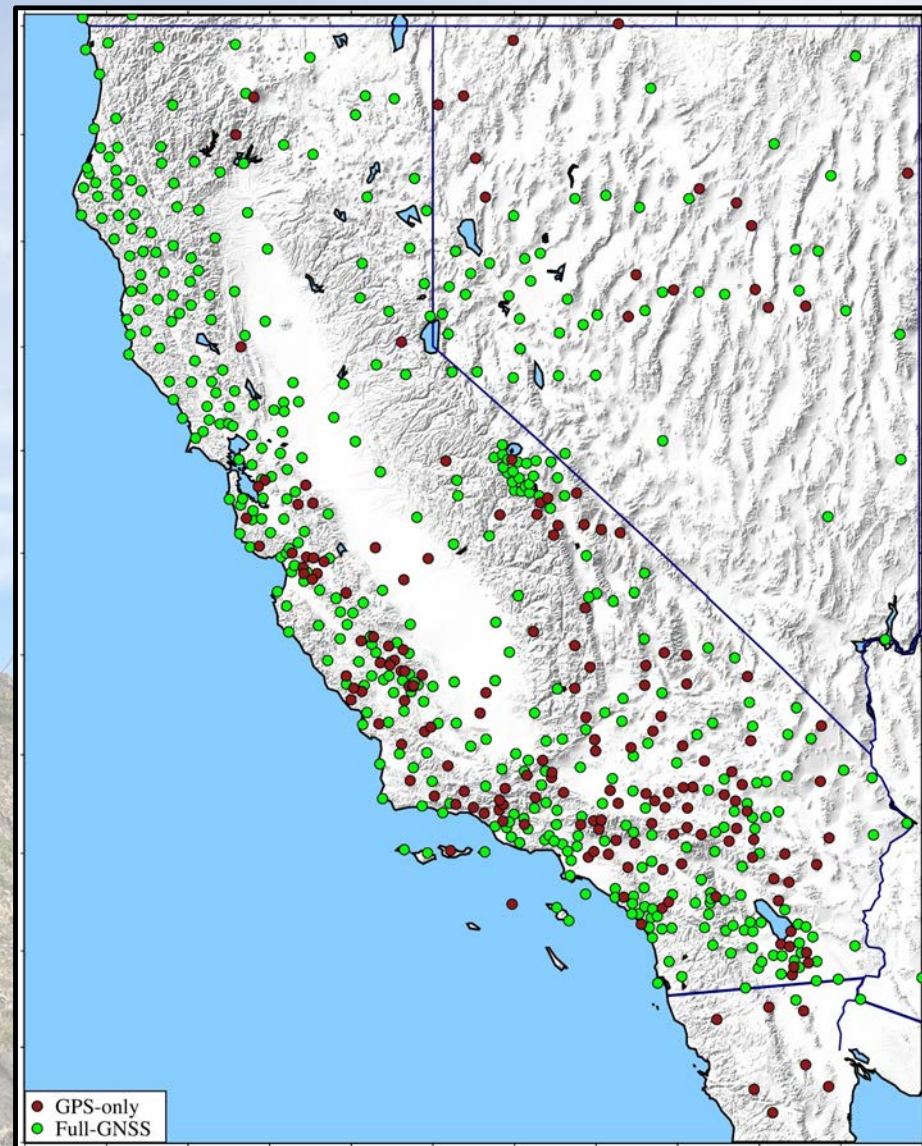
## Station Communications

ATT and Verizon cell modems: 351

2.4 and 5 GHz radios

HughesNet VSATs: 18

Other: Host-provided, HPWREN, Starlink





# PHASE-OUT OF VSAT TERMINALS BY MAY, 2024



18 VSATs to be replaced with Starlink units by end of May  
Typical Latency: ~20-50 ms  
Throughput: ~25 Mbps  
Daily station files pulled in ~ 10 minutes  
Uptime/reliability: uninterrupted with good skyview

## RV UNIT

Power Draw: 25 W

Can leave running 24/7 (RT possible)

Internal moving parts, self-points

Lower gain antenna than commercial unit

Purchased individually



## COMMERCIAL UNIT

Power Draw: 80 W

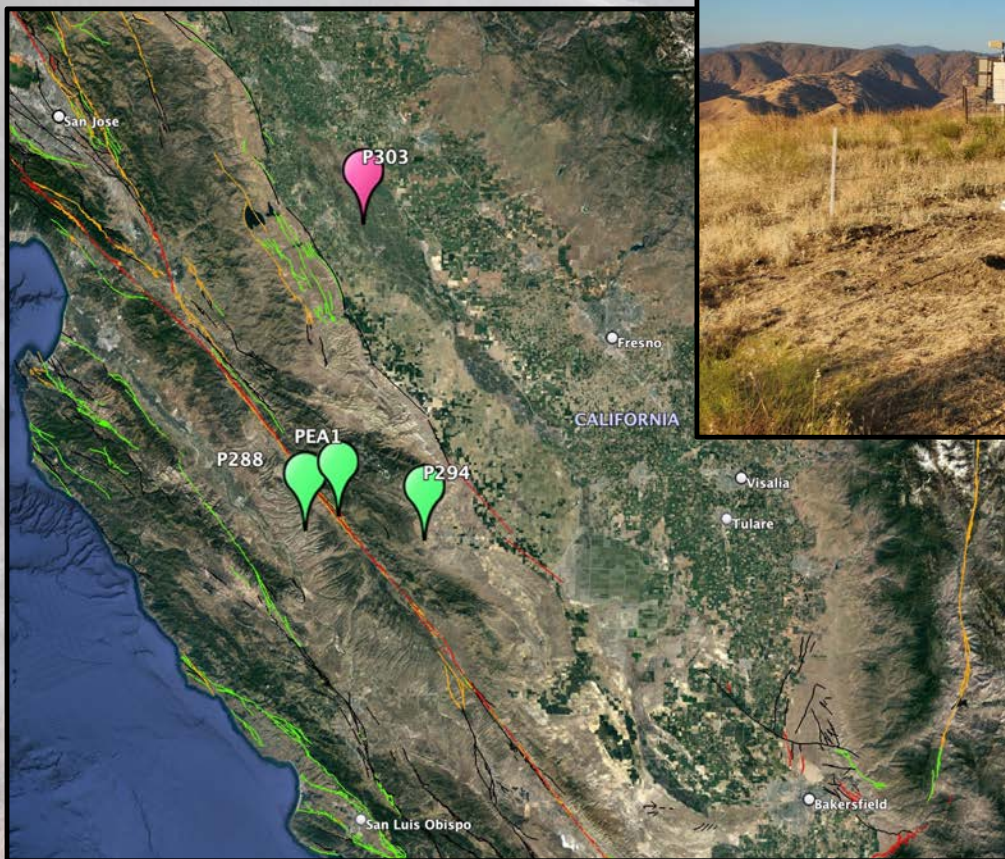
Must be put on timers with DC power source

Can stream data with AC power source

No internal moving parts

Corporate account

# JPL OPERA PROJECT - CORNER REFLECTORS



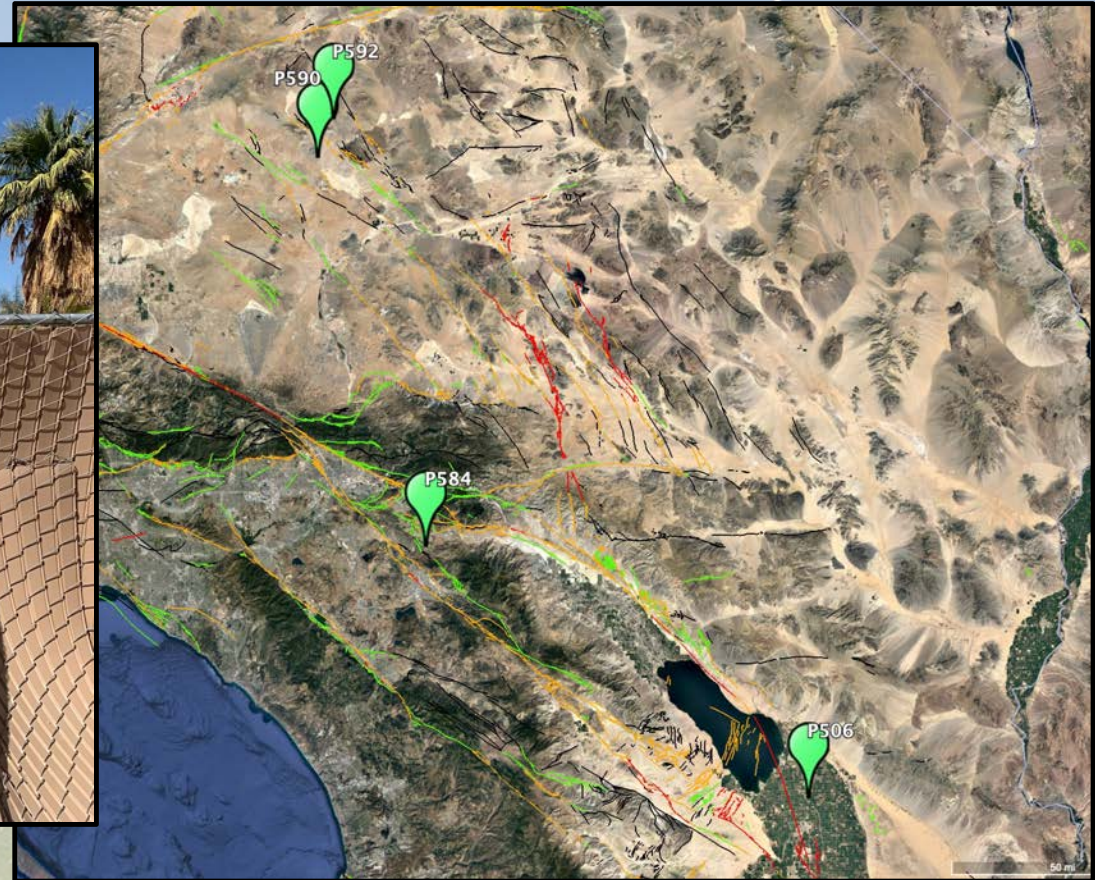
3 of 4 sites installed (P288, PEA1, P294)

Remaining reflectors at P303 -> Planned Nov Install

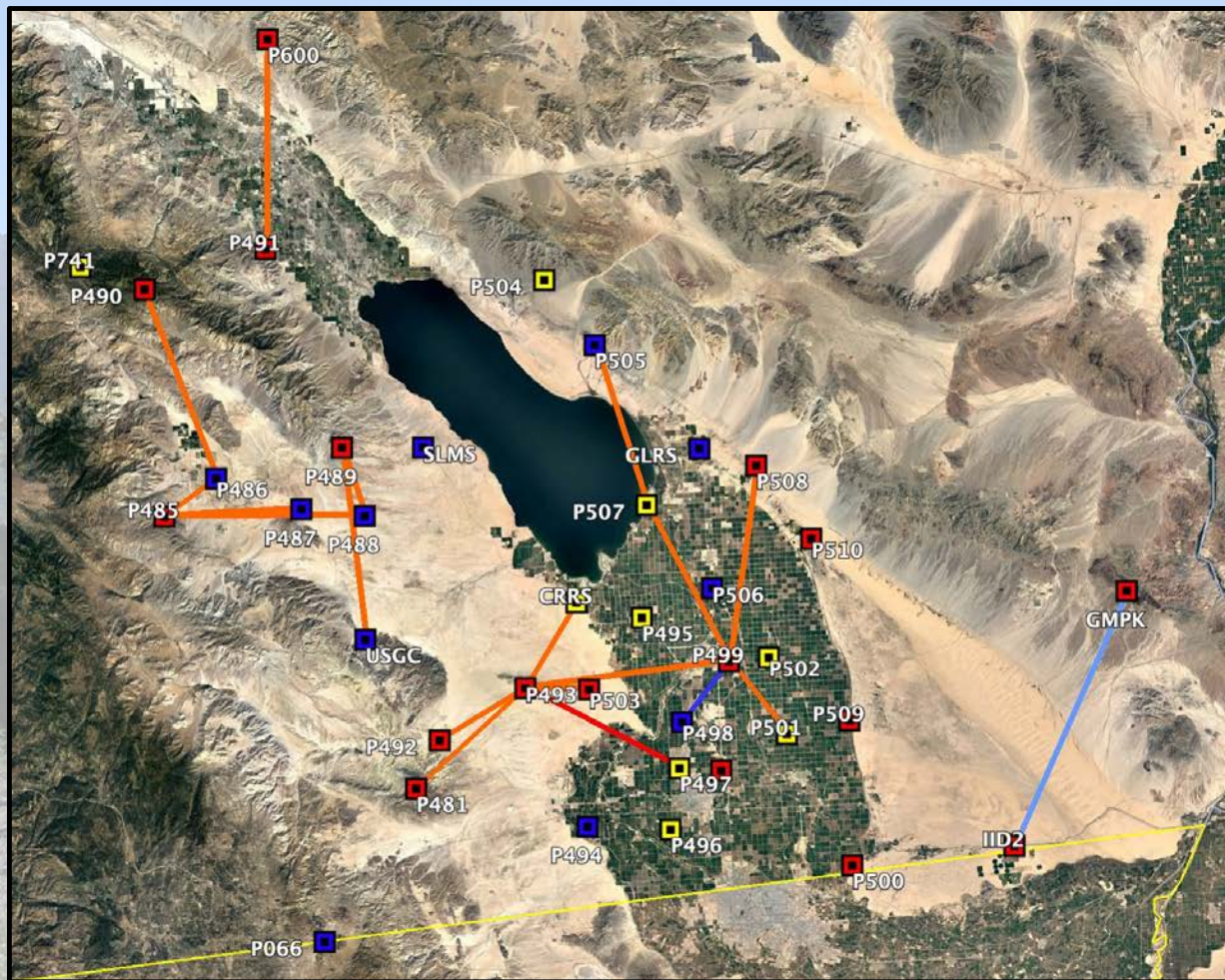
2 reflectors at each site

2.4 m in width.

# STATION RELOCATIONS



# SALTON TROUGH REGION UPGRADES



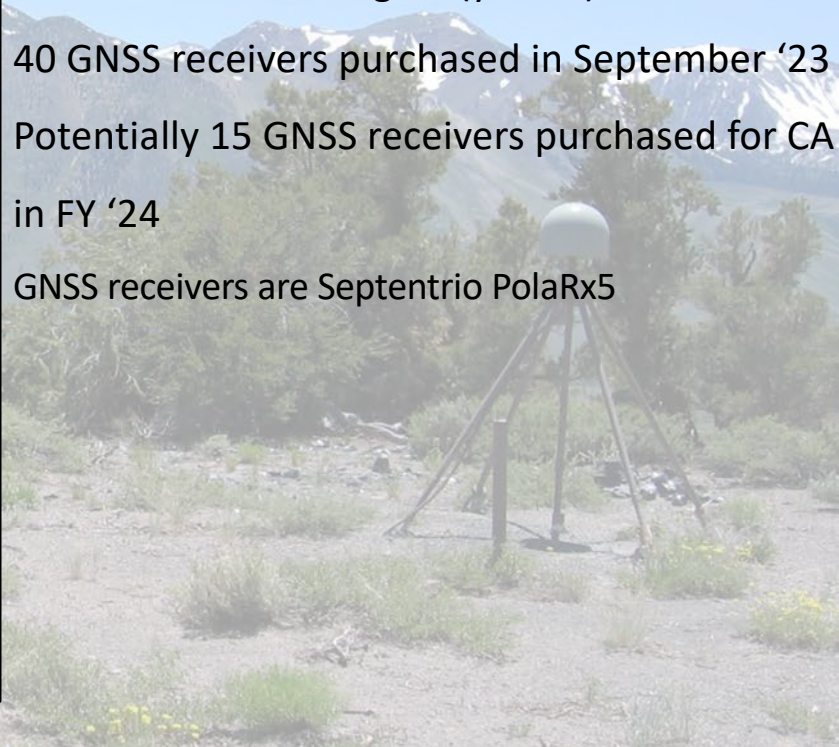
Radio network upgrades: winter of '24

9 NetRS remain in region (yellow)

40 GNSS receivers purchased in September '23

Potentially 15 GNSS receivers purchased for CA  
in FY '24

GNSS receivers are Septentrio PolaRx5

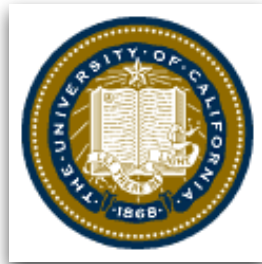
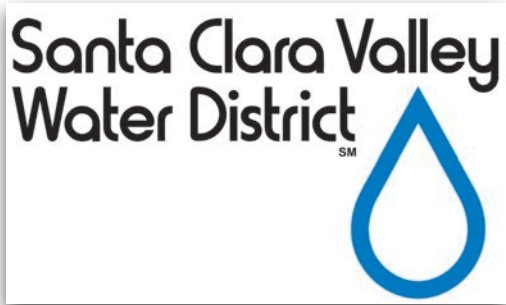


# EARTHSCOPE CLOUD MIGRATION



Former UNAVCO facility in Boulder, CO Closed  
Geodetic archive lifted to cloud – Sept '23  
Hardware, VPN configuration changes made at each  
NOTA station





QUESTIONS?

