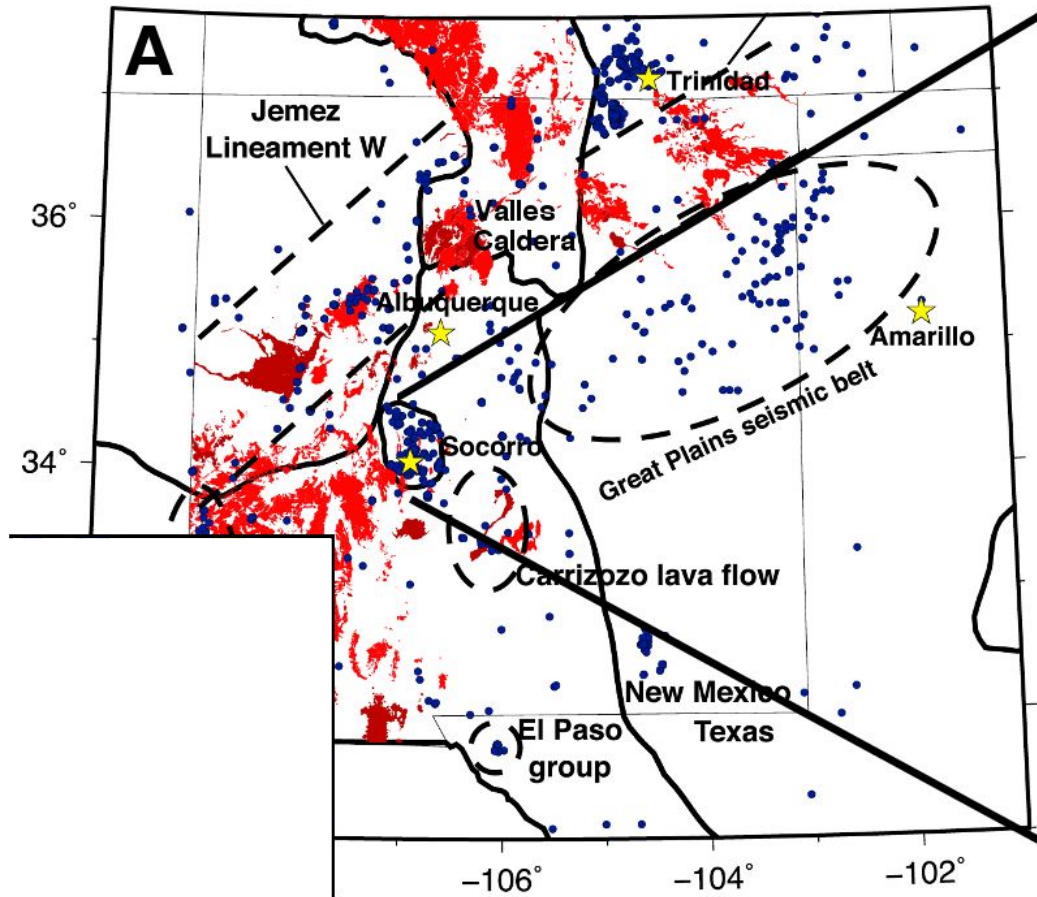


GNSS (and some InSAR) in the Desert: A Magma Body and some Hydrology ...

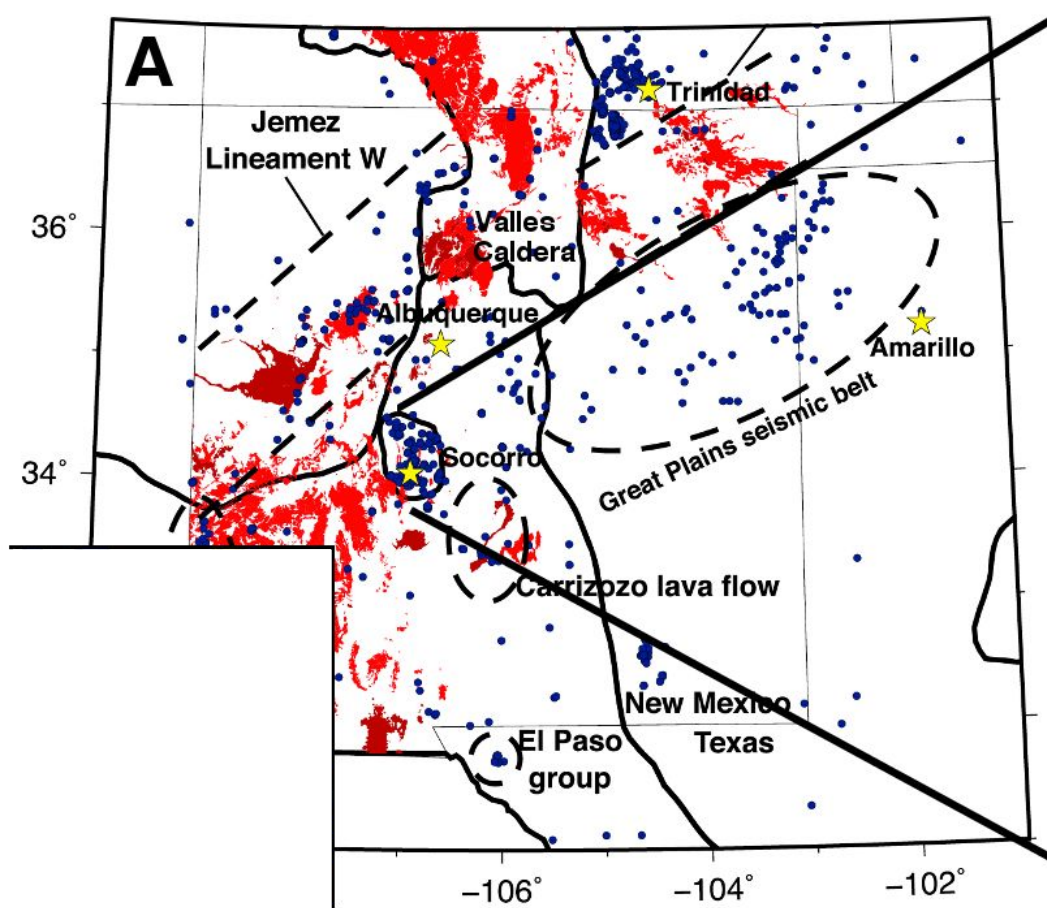
Ronni Grapenthin
University of Alaska, Fairbanks

with contributions from Emily Graves,
Andy Newman, and Mark Murray

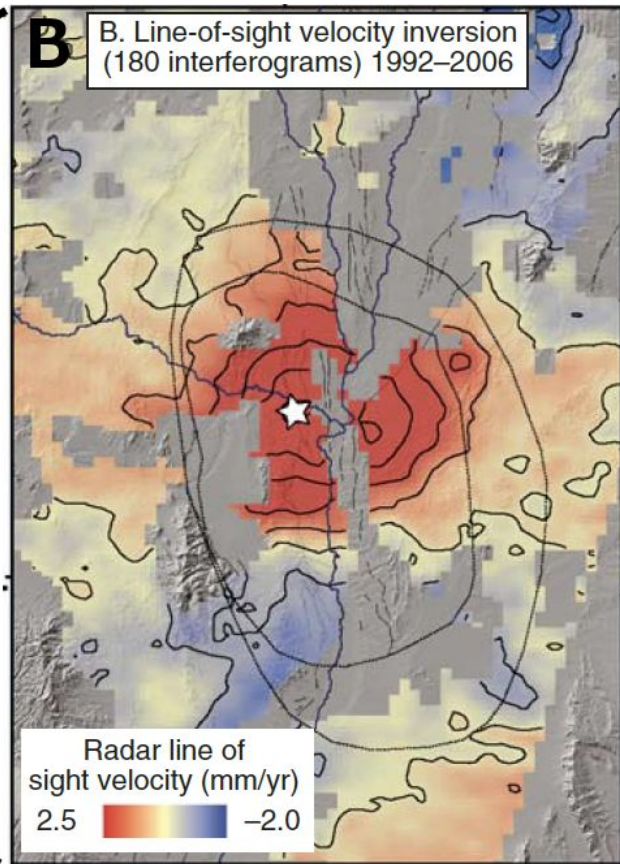




Nakai et al. (2017)

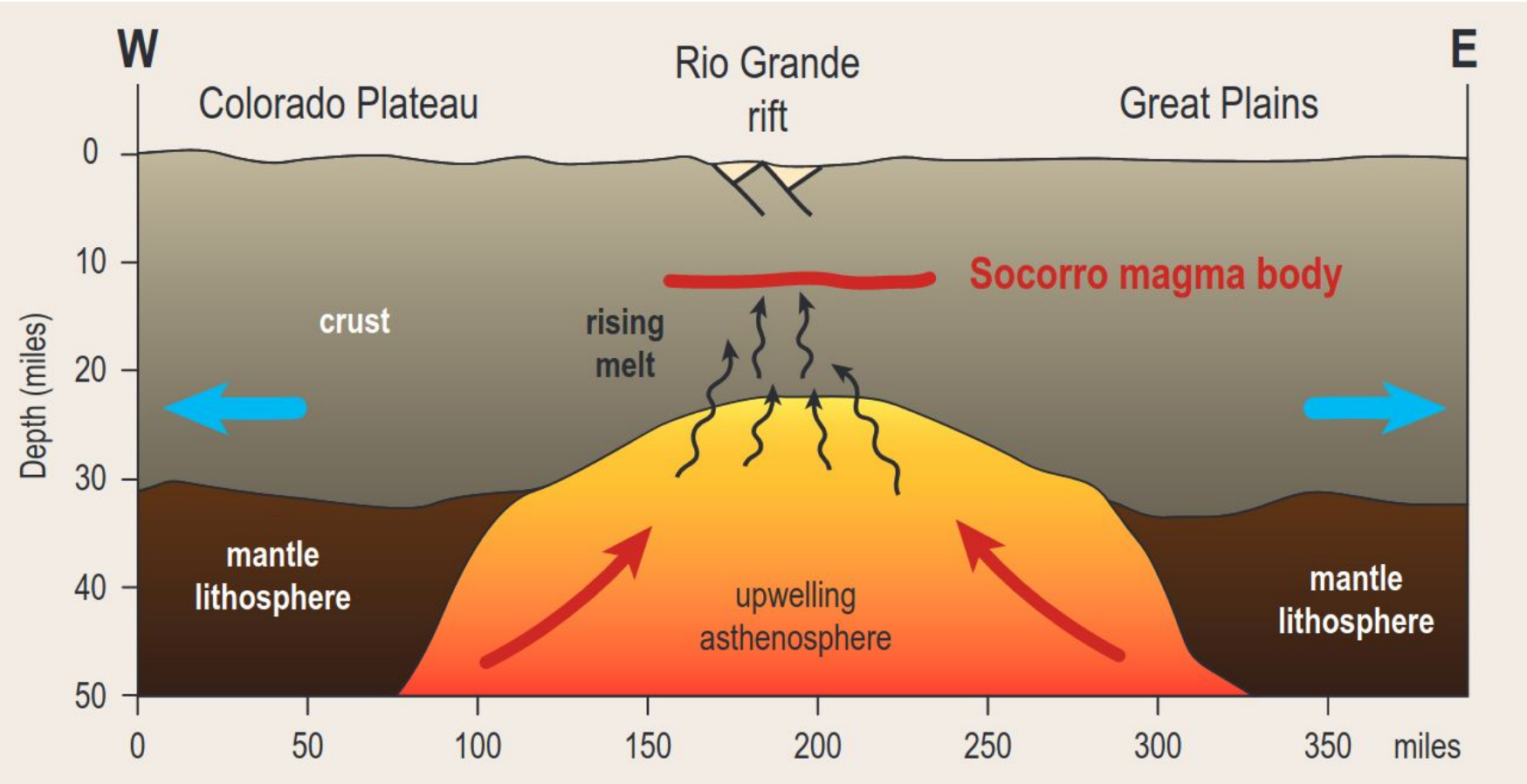


Nakai et al. (2017)

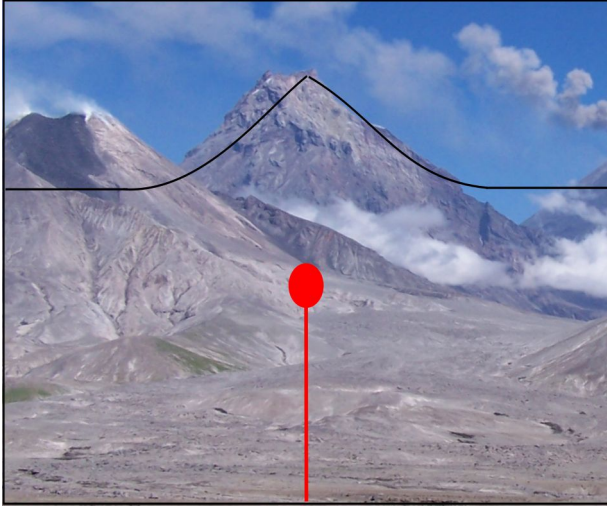


Finnegan & Pritchard (2009)

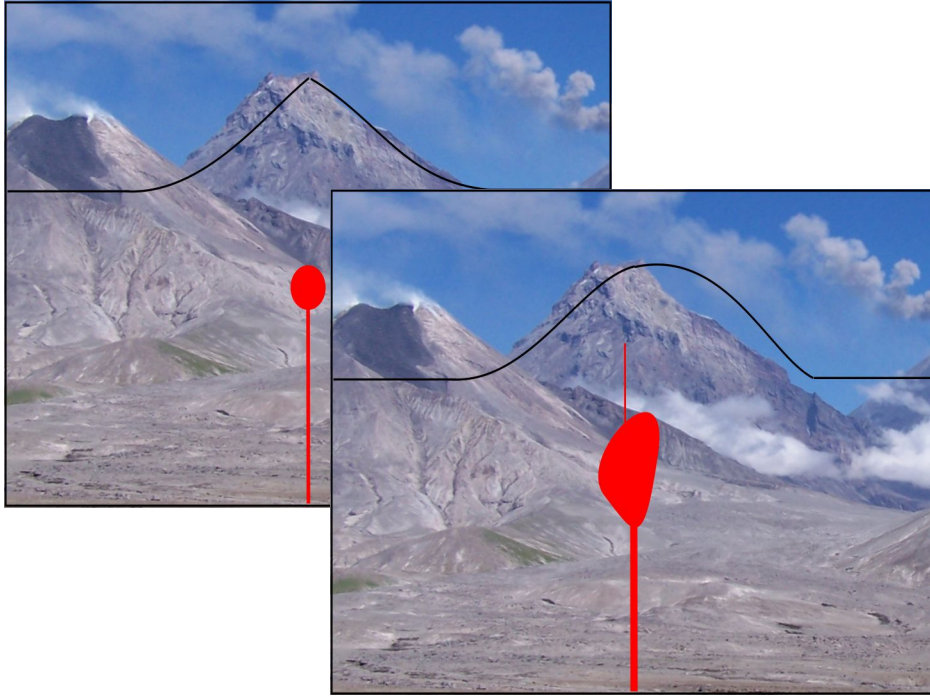
Socorro Magma Body



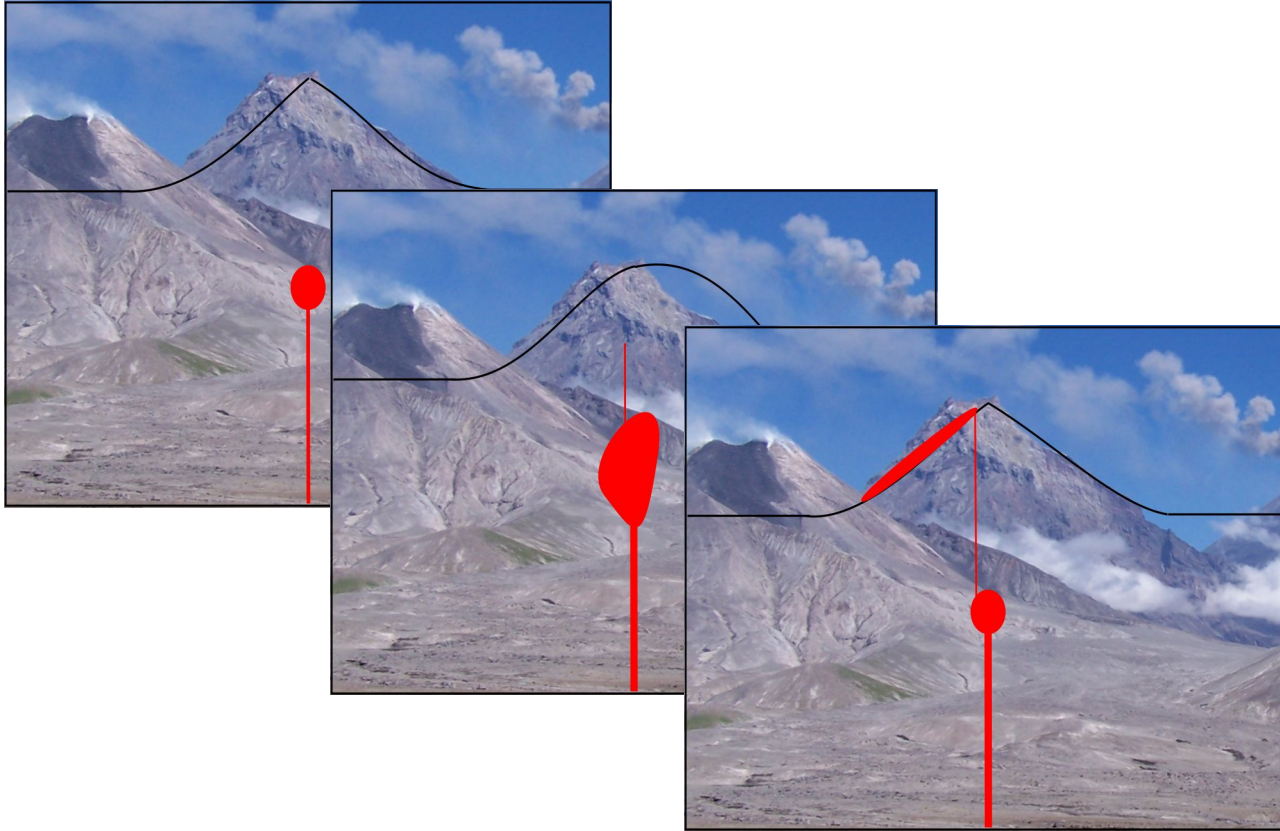
Volcano Geodesy - Interlude



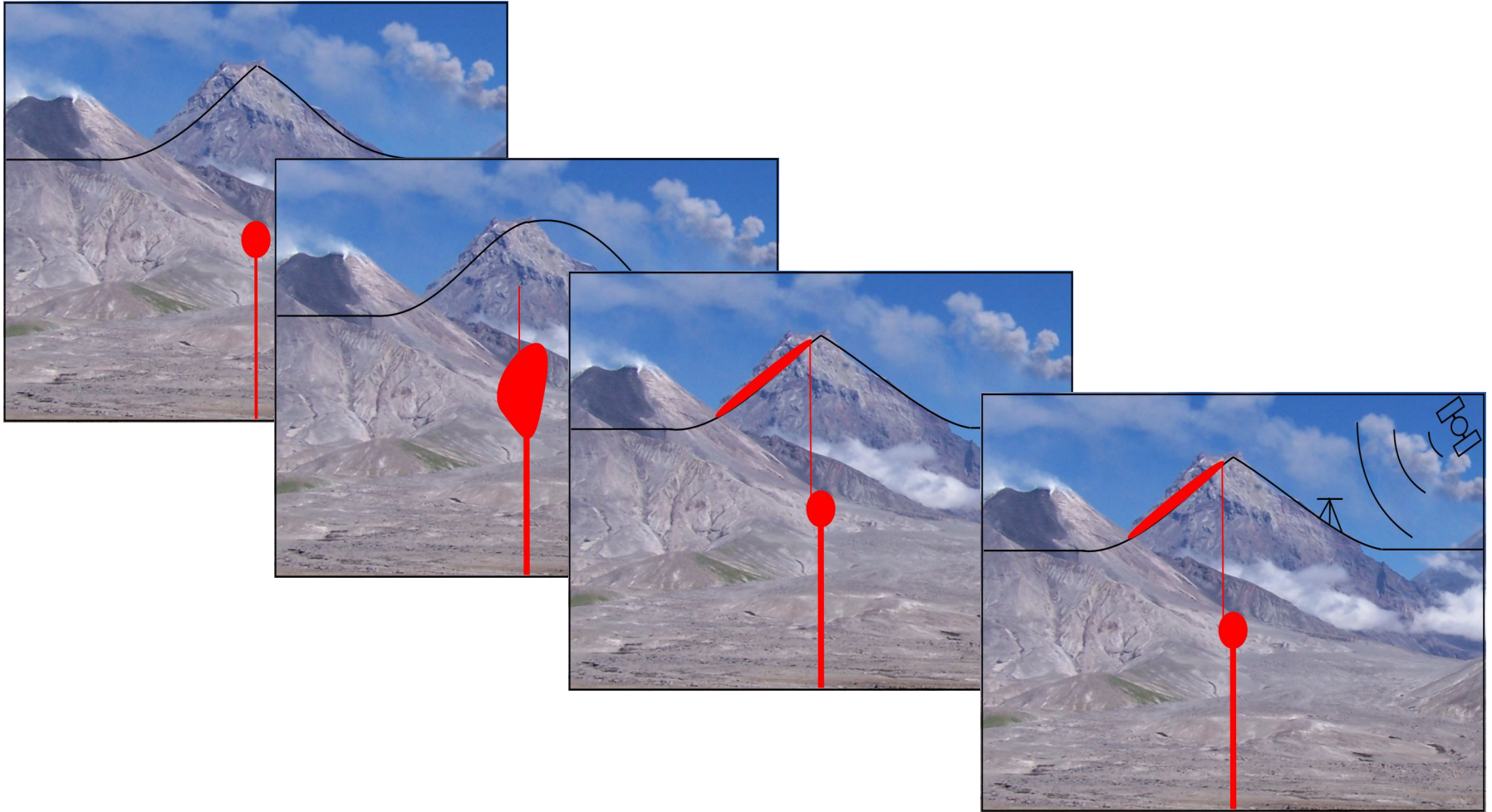
Volcano Geodesy - Interlude



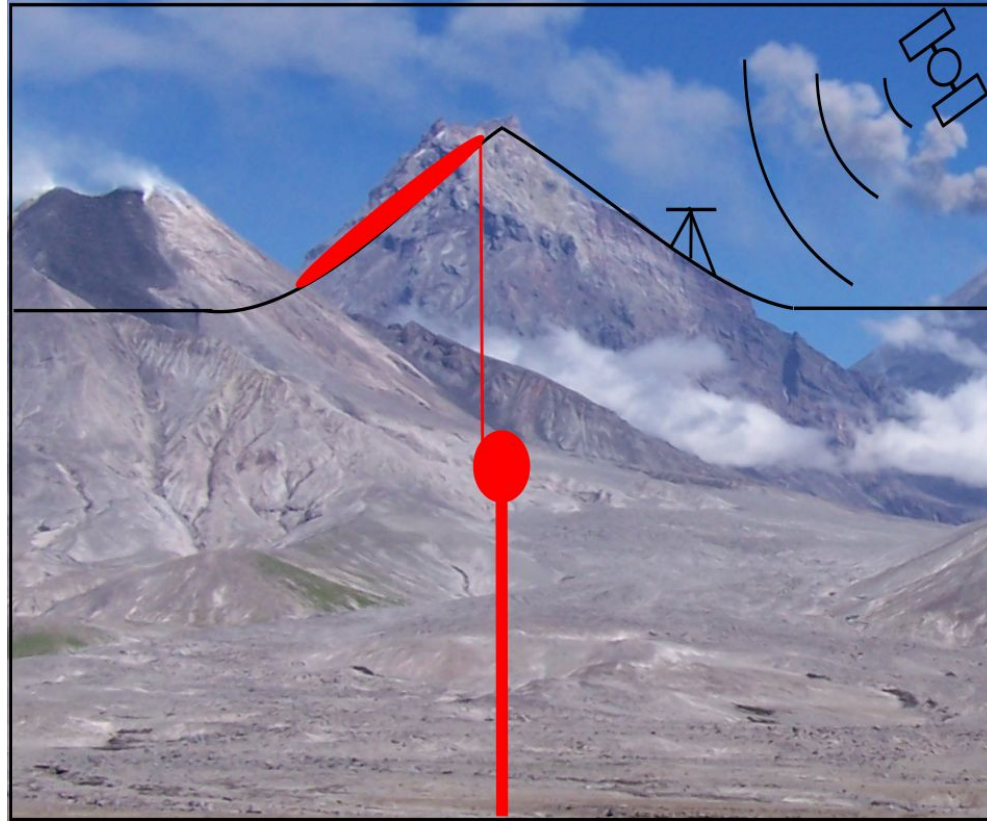
Volcano Geodesy - Interlude



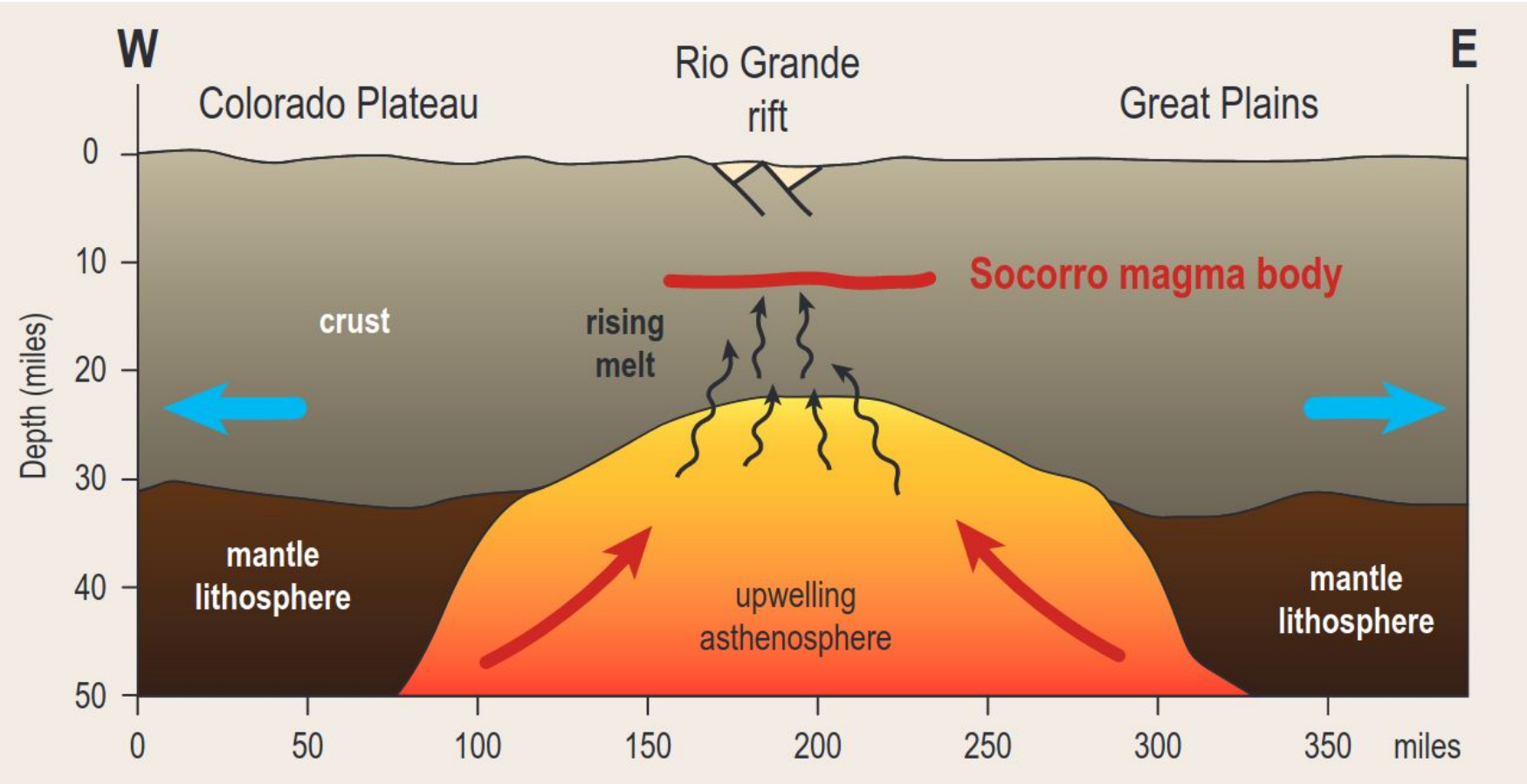
Volcano Geodesy - Interlude



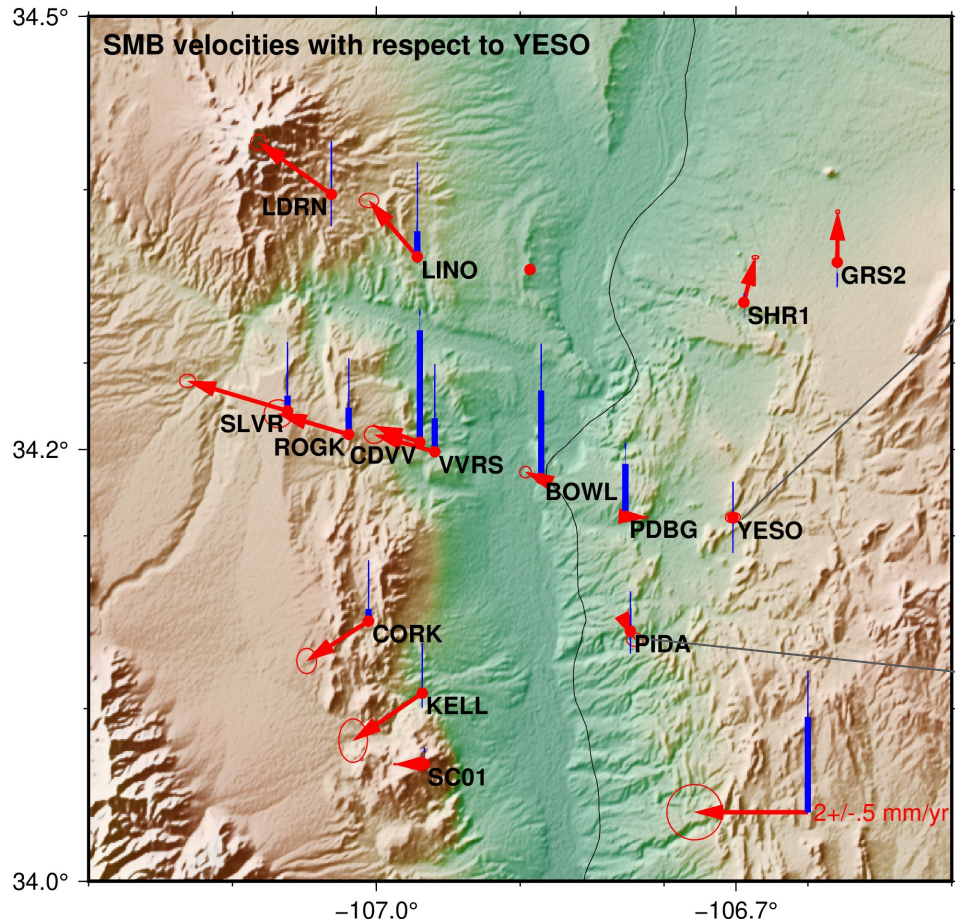
Volcano Geodesy - Interlude



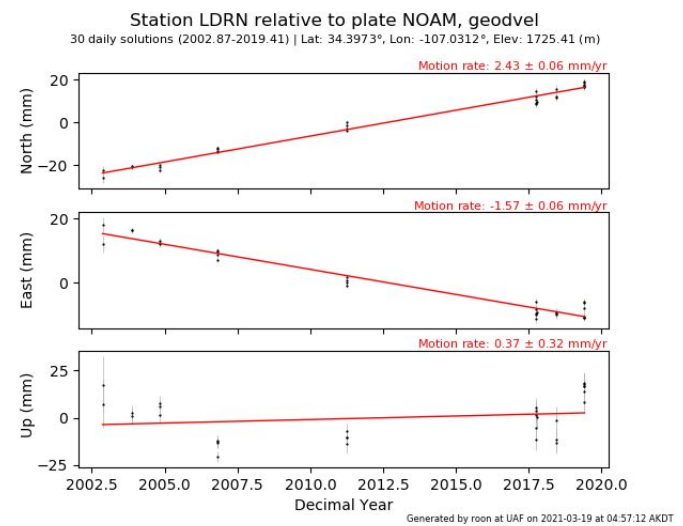
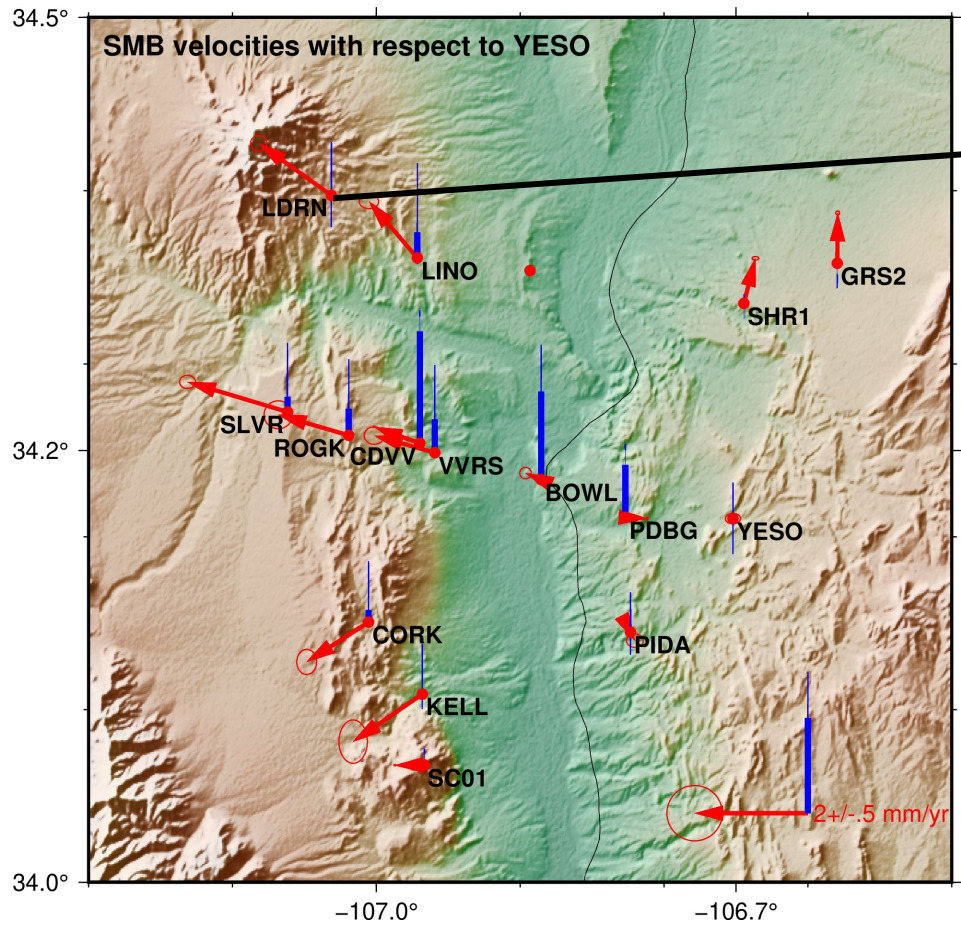
Socorro Magma Body



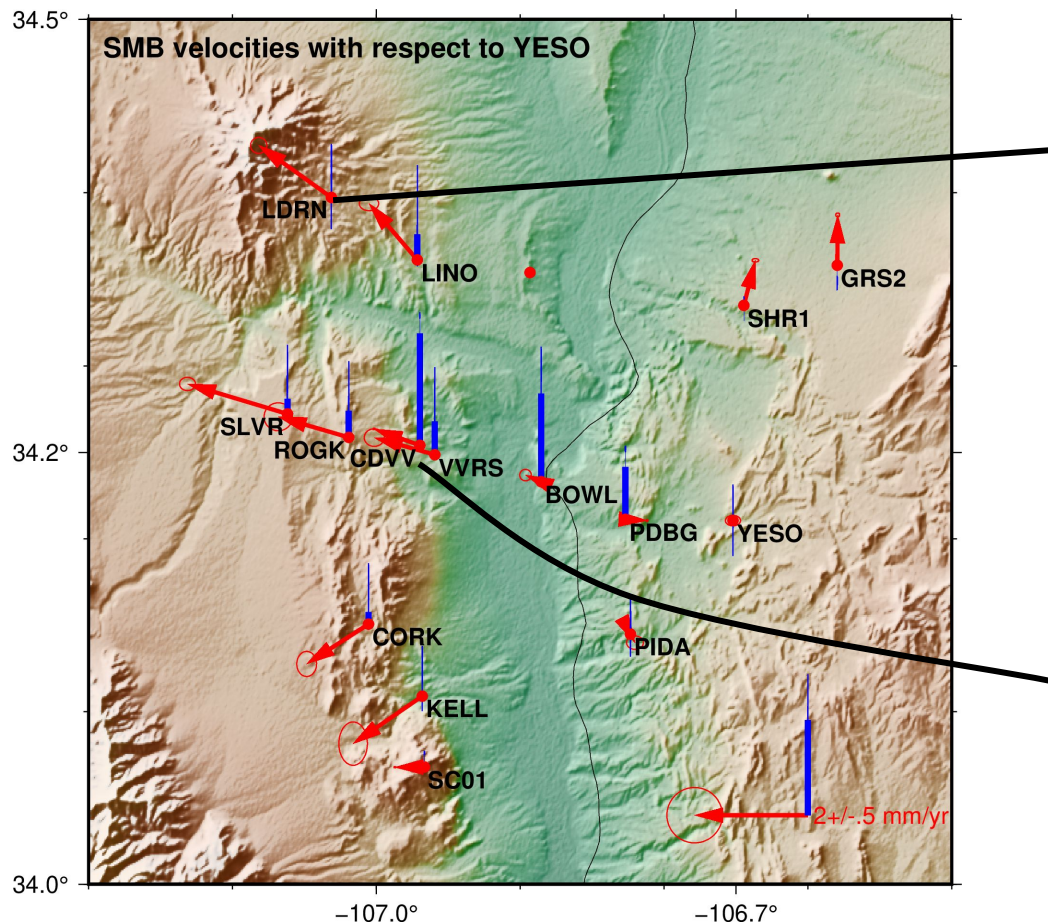
Socorro Magma Body



Socorro Magma Body

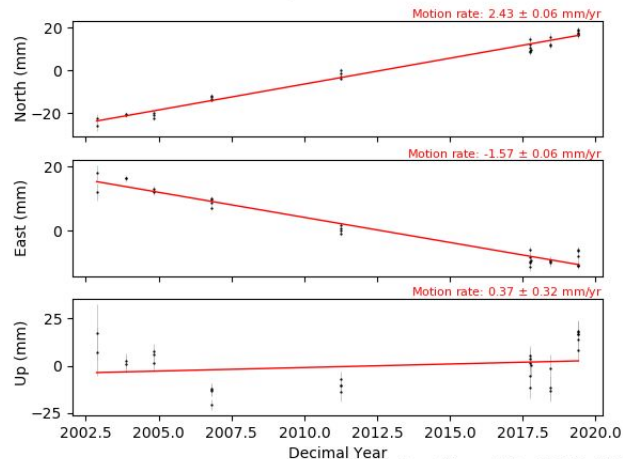


Socorro Magma Body



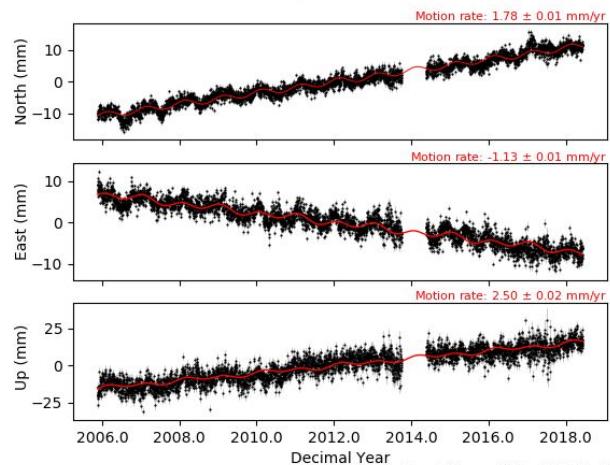
Station LDRN relative to plate NOAM, geodvel

30 daily solutions (2002.87-2019.41) | Lat: 34.3973°, Lon: -107.0312°, Elev: 1725.41 (m)

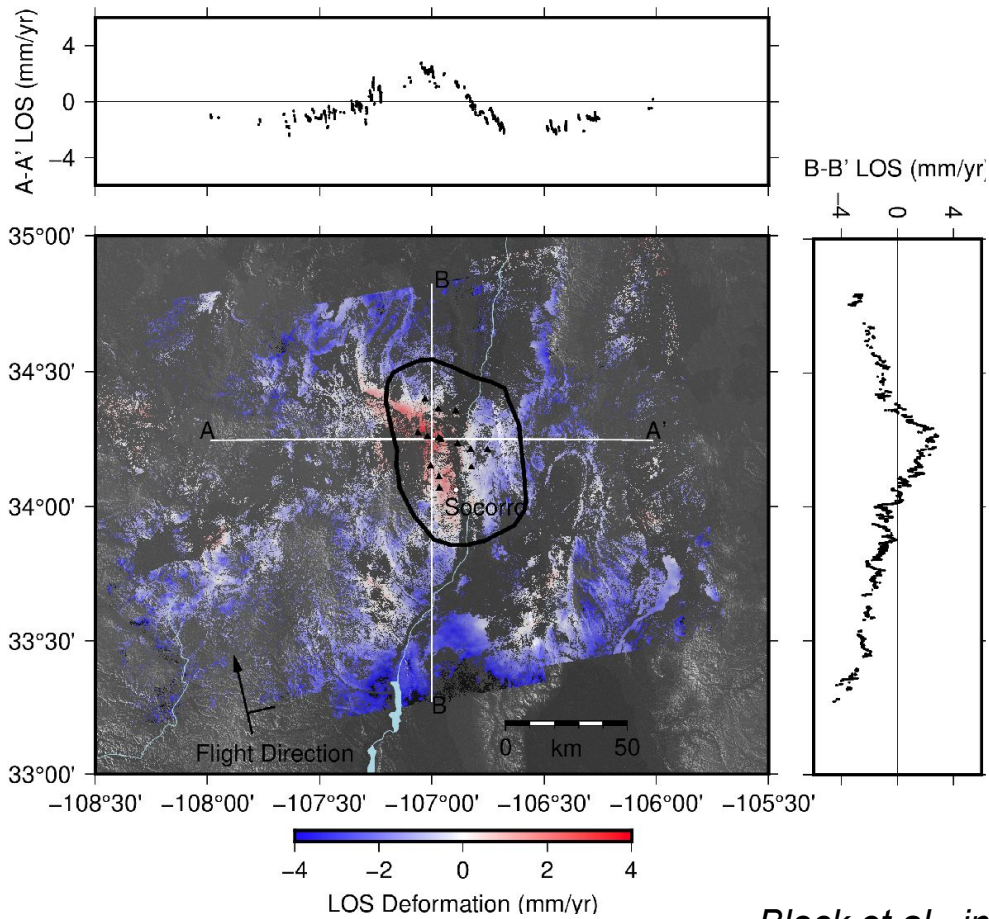


Station CDVV relative to plate NOAM, geodvel

4347 daily solutions (2005.88-2018.44) | Lat: 34.2541°, Lon: -106.9698°, Elev: 1553.33 (m)

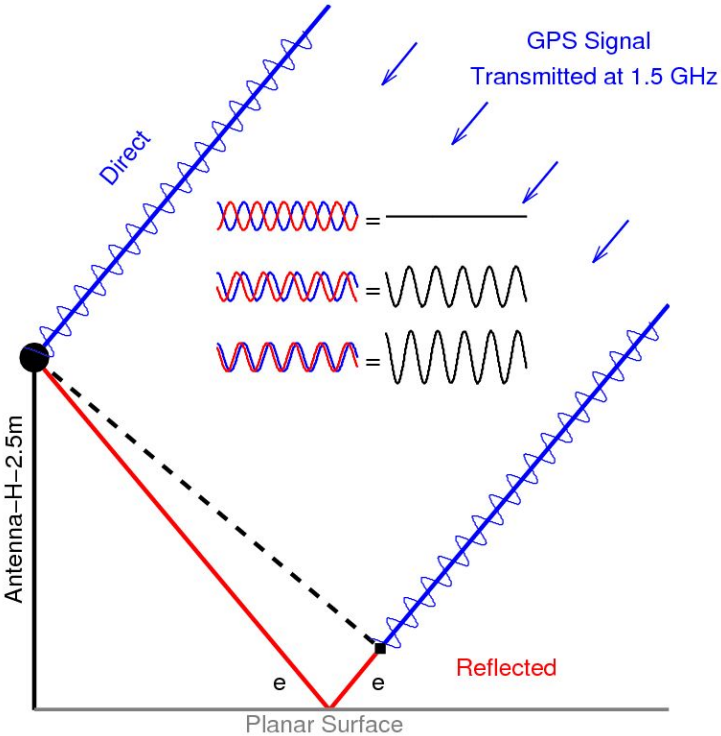


Socorro Magma Body



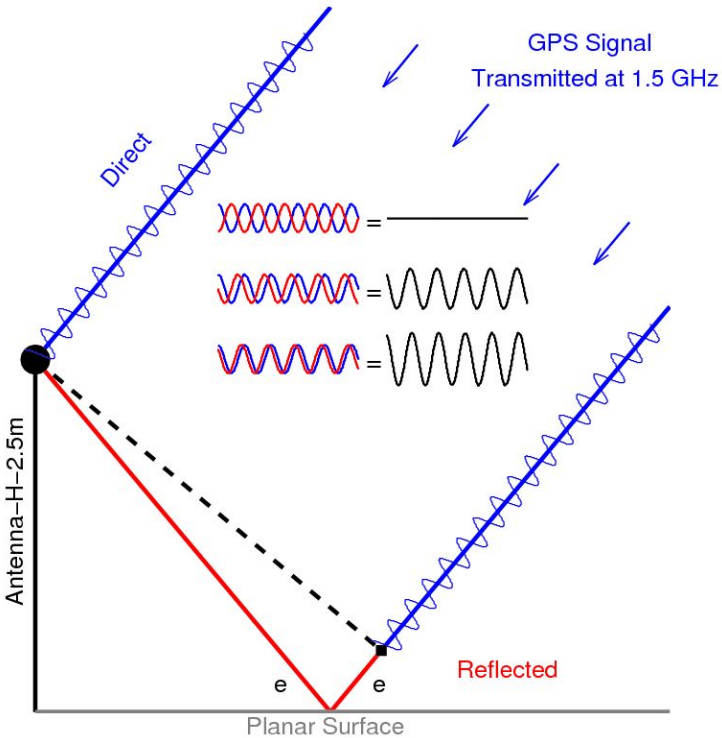
Block et al., in prep.

GNSS Reflections



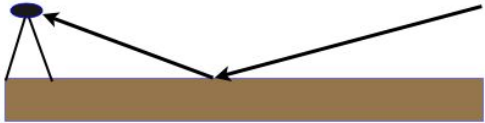
credit: Kristine Larson

GNSS Reflections



the reflections off bare soil produce this

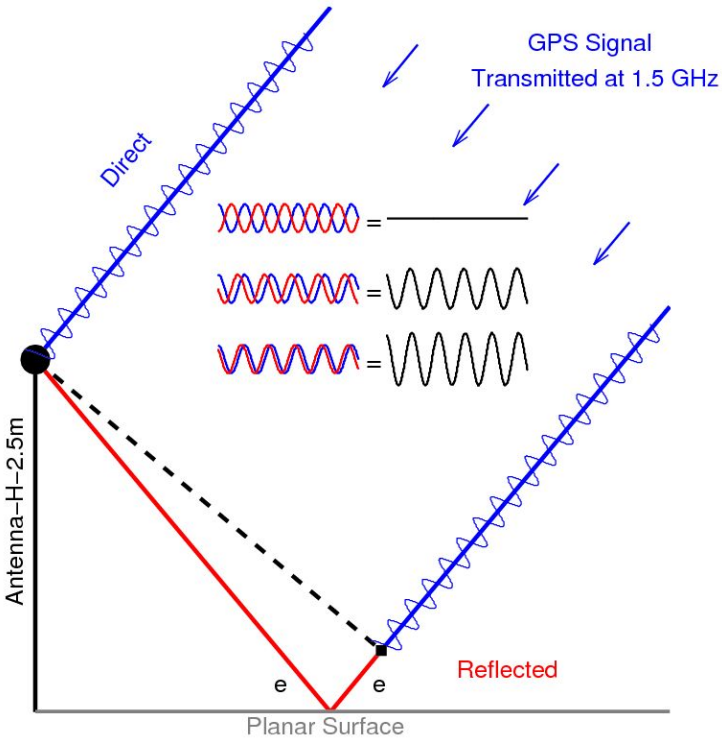
SNR curve



credit: Kristine Larson

credit: Kristine Larson

GNSS Reflections

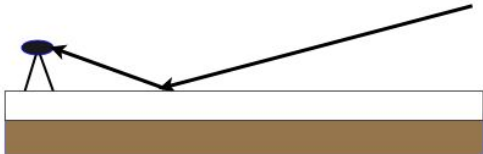
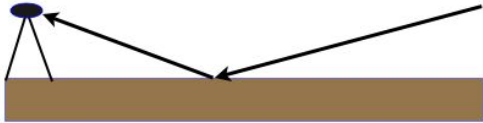


the reflections off bare soil produce this

SNR curve



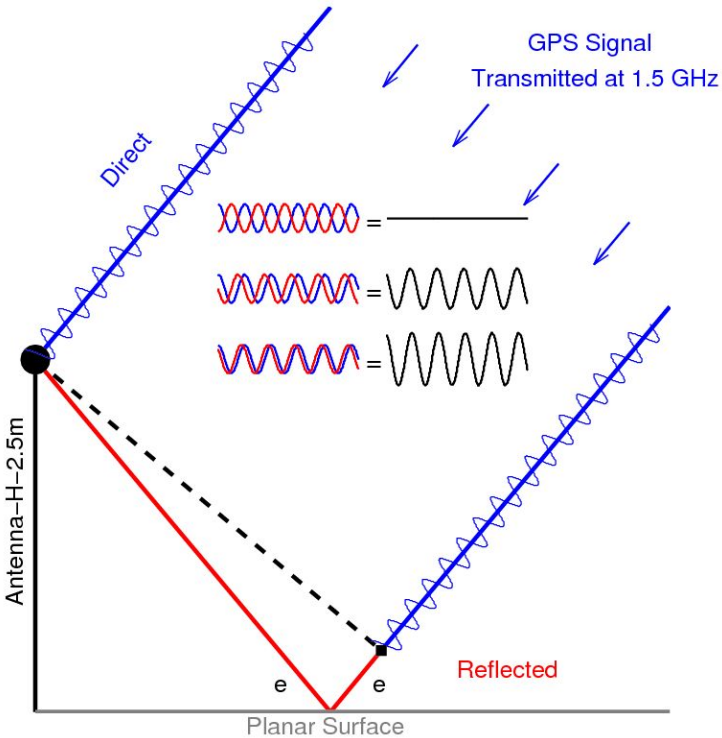
add a snow layer



credit: Kristine Larson

credit: Kristine Larson

GNSS Reflections



the reflections off bare soil produce this

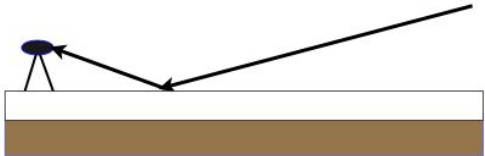
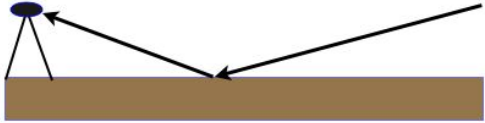
SNR curve



add a snow layer



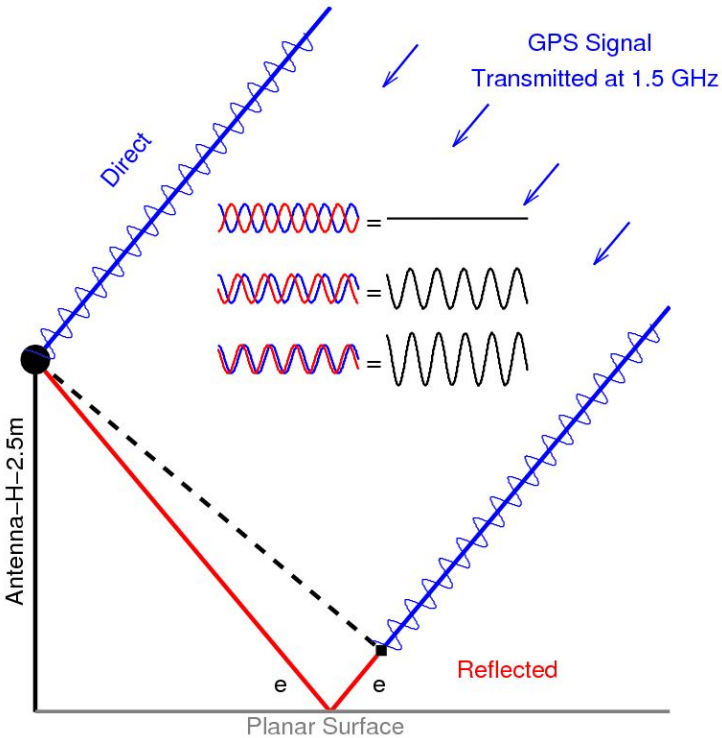
add vegetation



credit: Kristine Larson

credit: Kristine Larson

GNSS Reflections



the reflections off bare soil produce this

SNR curve



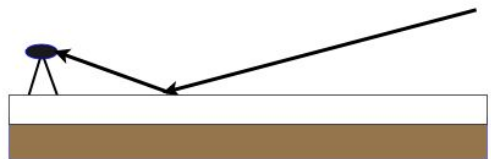
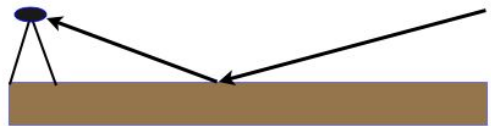
add a snow layer



add vegetation



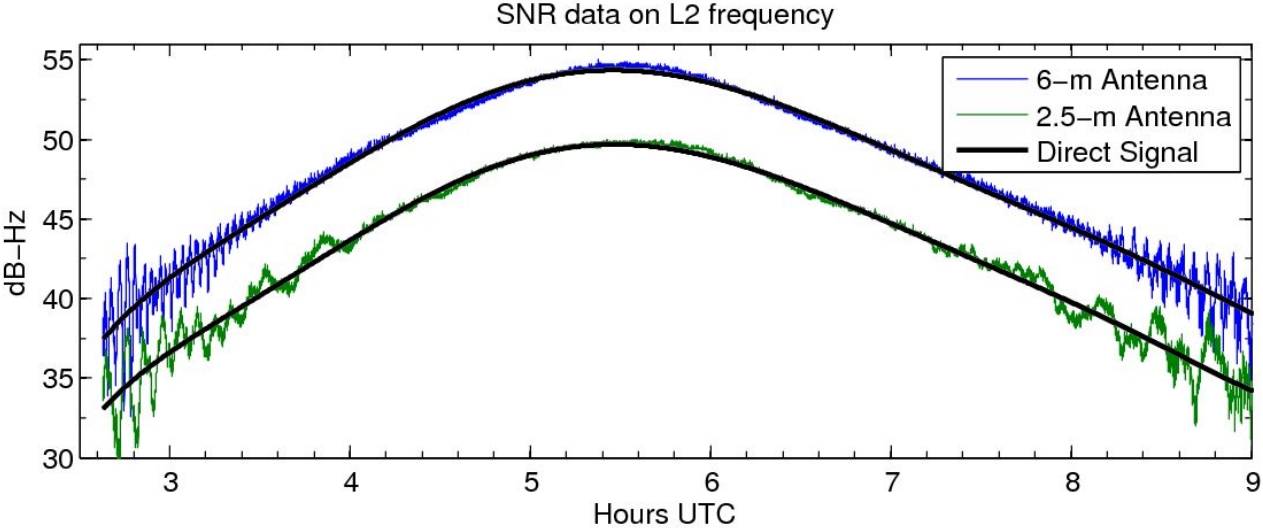
make the soil wet



credit: Kristine Larson

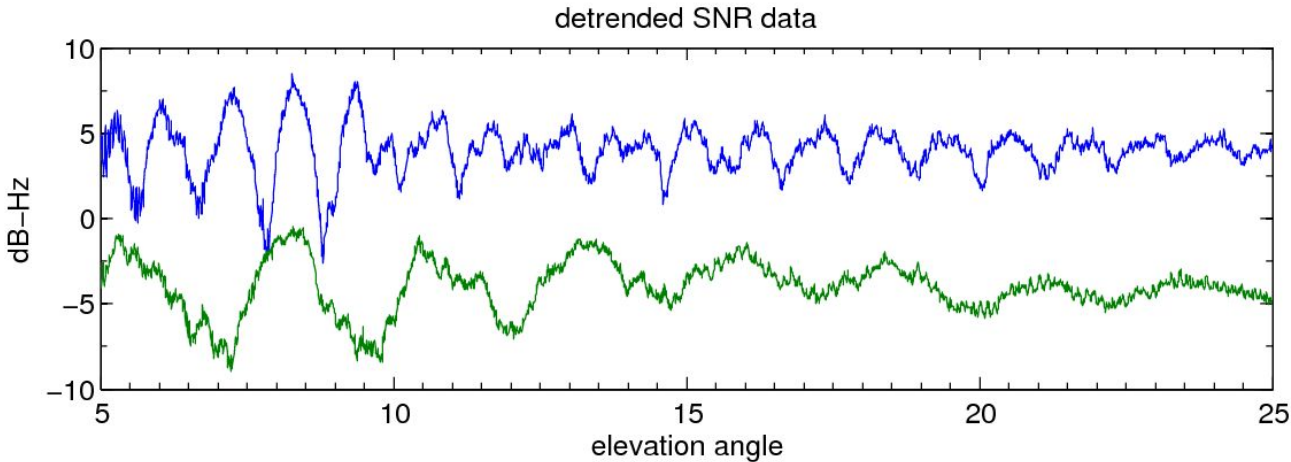
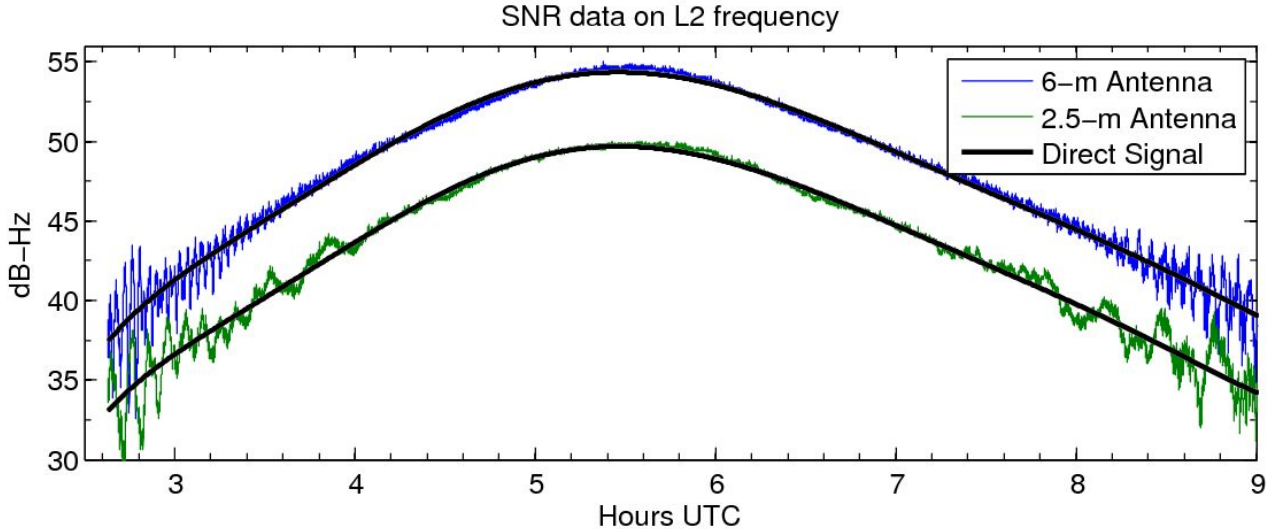
credit: Kristine Larson

GNSS Reflections



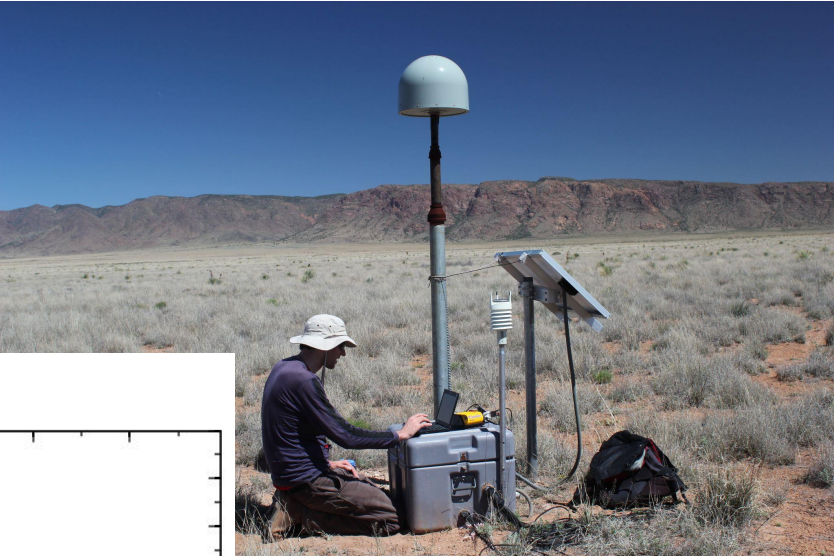
credit: Kristine Larson

GNSS Reflections

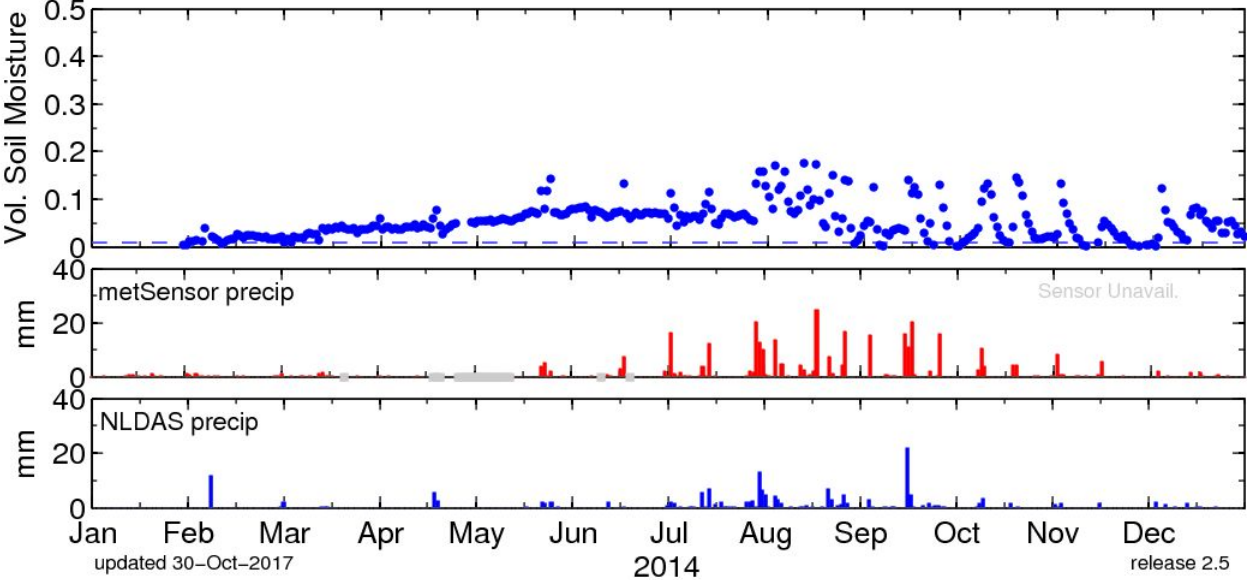


credit: Kristine Larson

GNSS Reflections



PBO H₂O: grs2



credit: Kristine Larson

GNSS in the Desert ...



... thank you!