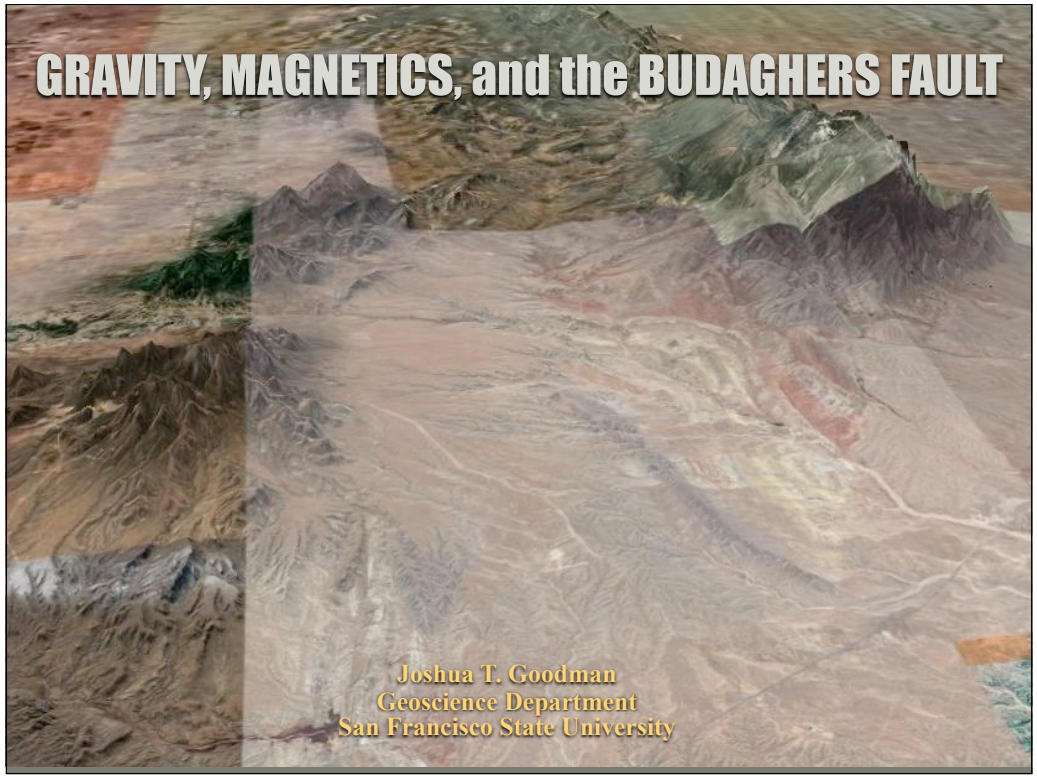
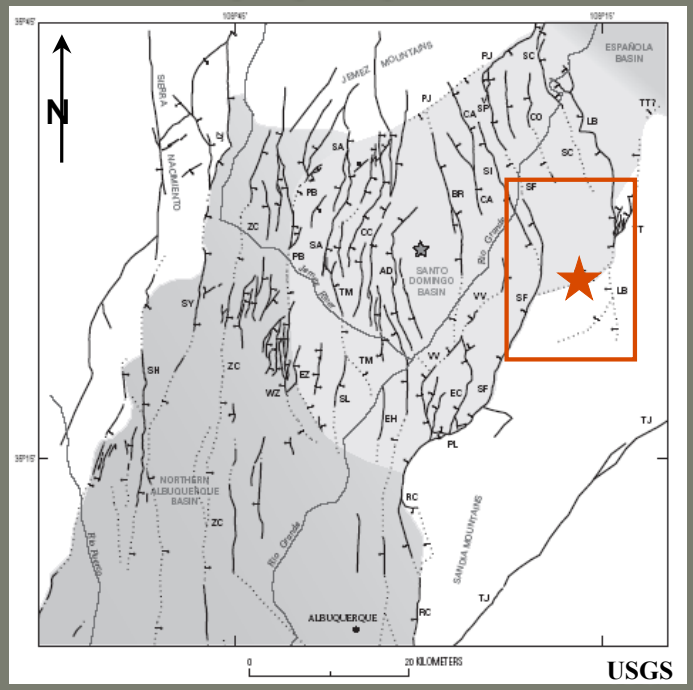
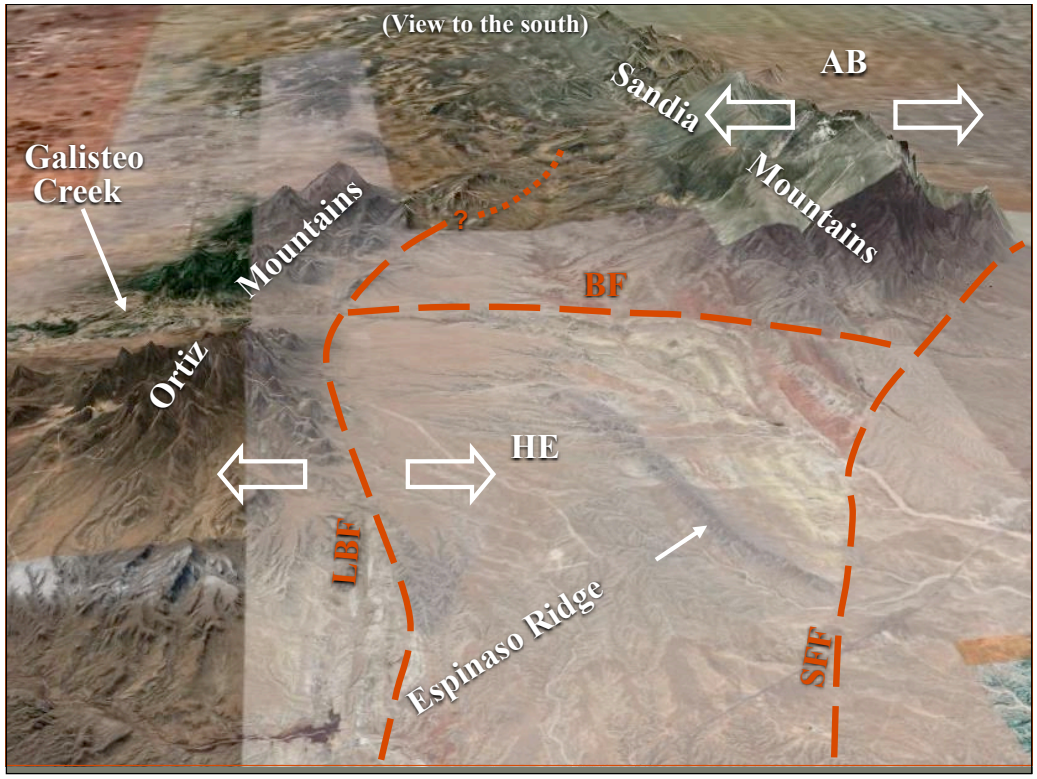

GRAVITY, MAGNETICS, and the BUDAGHERS FAULT
Joshua T. Goodman
Geoscience Department
San Francisco State University

MOTIVATING QUESTIONS

- **What is the Budaghers fault?**
- **How can gravity and aeromagnetic data be used for tectonic modeling?**

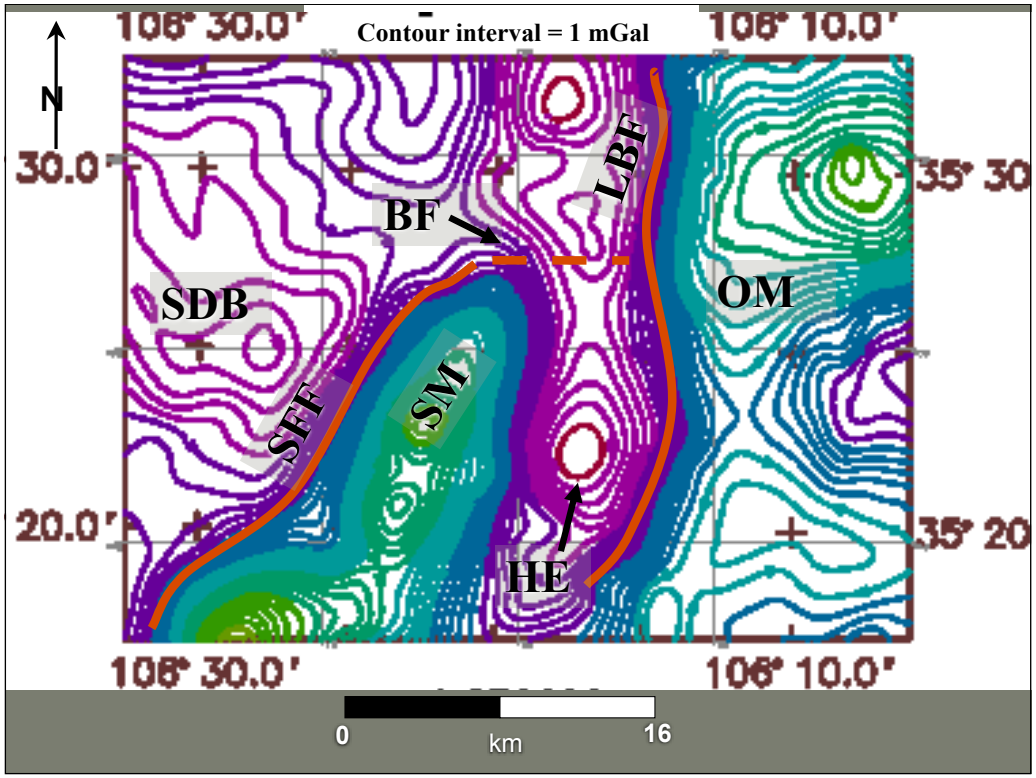
TECTONIC MAP



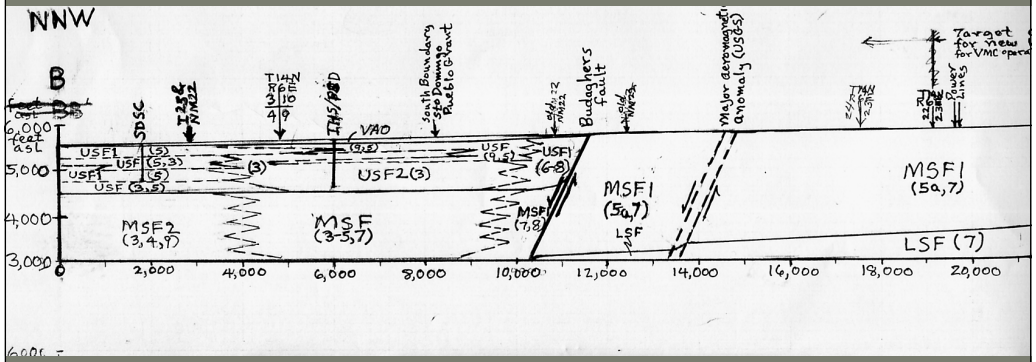

(View to the south)
AB
Sandia
Mountains
Galisteo
Creek
Mountains
?
BF
Ortiz
HE
LBF
Espinaso Ridge
SFF

GRAVITY METHODS

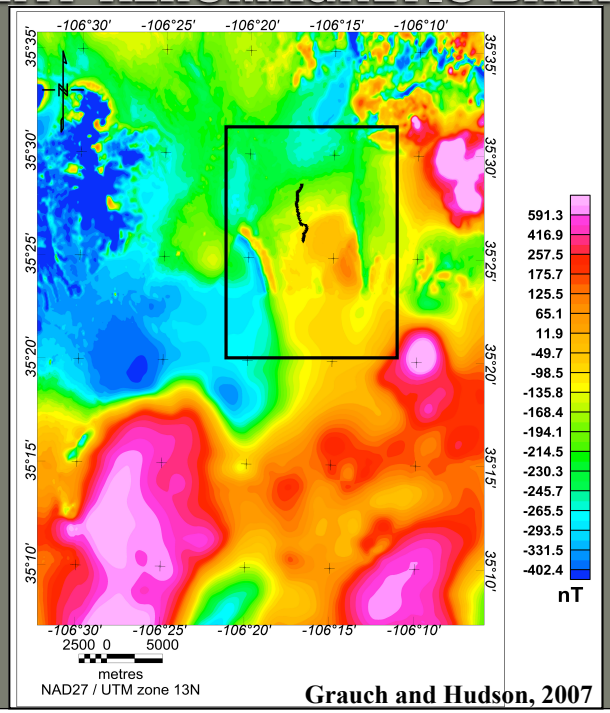
- Data collection
- Data reduction
- Gravity models


Contour interval = 1 mGal
106° 30.0'
106° 10.0'
N
30.0'
35° 30
20.0'
35° 20
BF
LBF
SDB
OM
SFF
SM
HE
106° 30.0'
106° 10.0'
0
km
16

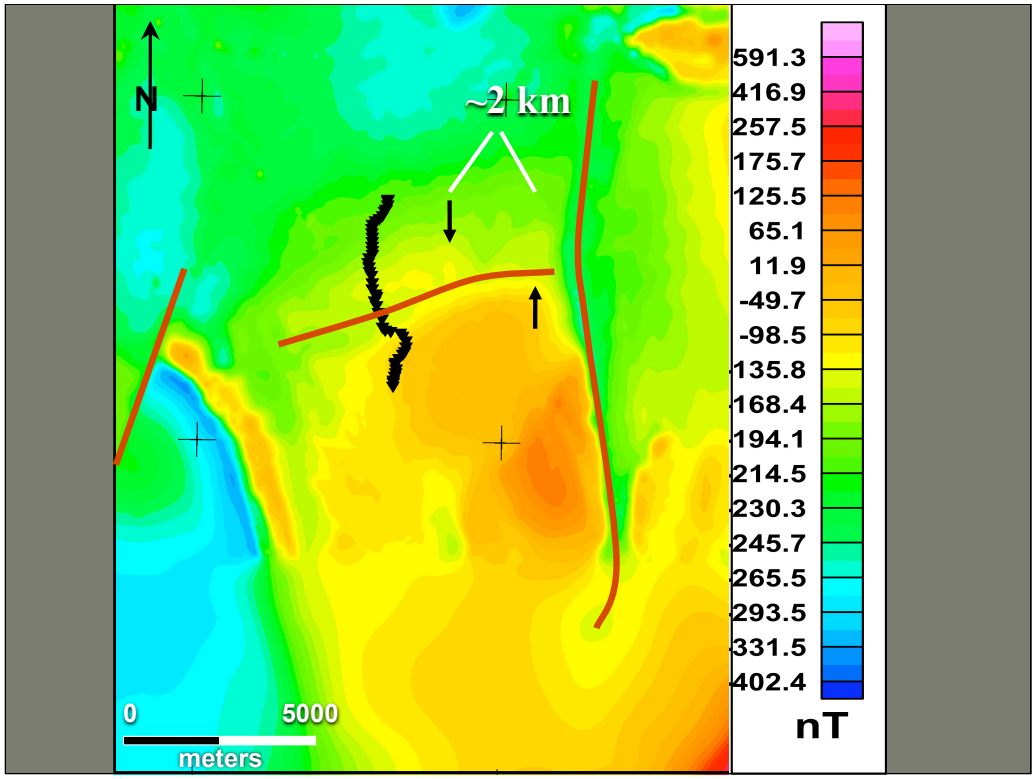
GEOLOGIC CROSS SECTION



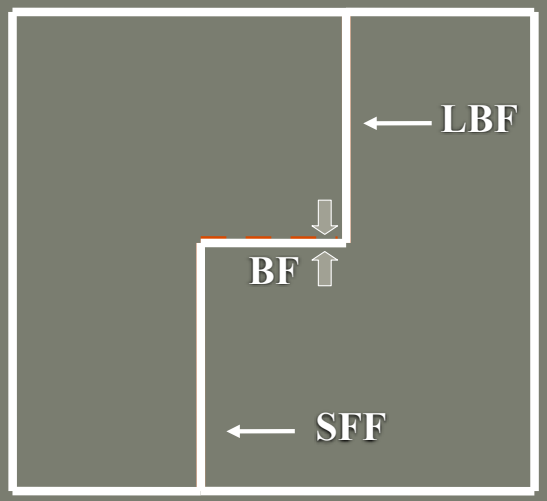
RTP AEROMAGNETIC DATA



Grauch and Hudson, 2007


N
~2 km
591.3
416.9
257.5
175.7
125.5
65.1
11.9
-49.7
-98.5
-135.8
-168.4
-194.1
-214.5
-230.3
-245.7
-265.5
-293.5
-331.5
-402.4
nT
0
5000
meters

SIMPLIFIED TECTONIC MODEL



BF – opening mode requires component of left-lateral slip

CONCLUSIONS

- **Budaghers fault accommodates differential slip between La Bajada and San Francisco faults (i.e., it is a tear fault).**
- **Budaghers fault is a left-oblique normal fault.**
- **Aeromagnetic high left-laterally offset ~2 km.**
- **No significant gravity gradient across the Budaghers fault.**


QUESTIONS ???