

GEOL 10 Activity 7 A: Locating an Earthquake Activity

NAME _____ DATE _____

1. Look at all four records from this one earthquake.

a. Which station do you think is closest to the epicenter? _____

b. Which station is the furthest from the epicenter? _____

2. Reading the arrival times of the P and S waves (Reading the phases). Read the arrival times for the P and S waves for Stanford, Lick (Observatory), and Berkeley. Fill in the times in the table below. San Andreas Observatory has been done for you. Use the travel time curve and the S-P interval to determine the distance for each station.

| Station | P- time (hr:mn:sec) | S -Time (hr:mn:sec) | S-P Time (sec) | Distance (km) |
|-------------------------|------------------------|------------------------|-------------------|------------------|
| San Andreas Observatory | 20:36:53.5 | 20:36:59 | 5.5 | 40 |
| Stanford | | | | |
| Lick | | | | |
| Berkeley | | | | |

3. Locate the earthquake by drawing circles around the appropriate stations, using the scale provided on map.

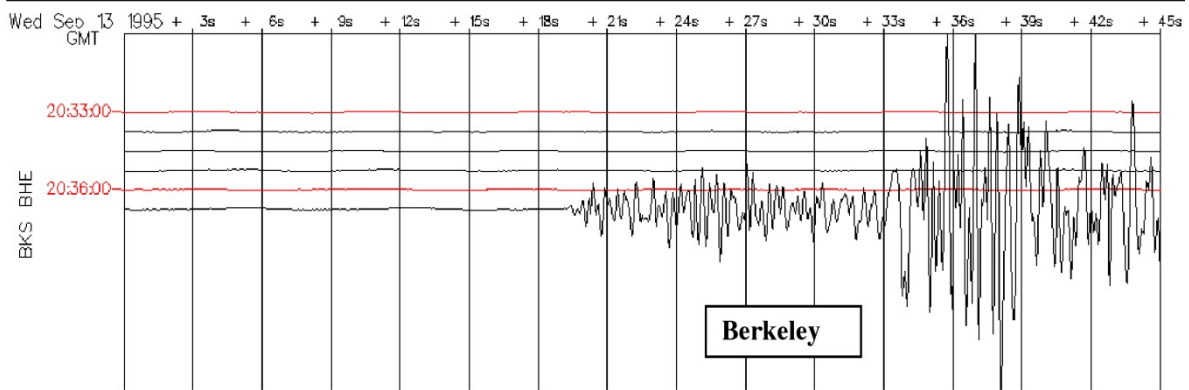
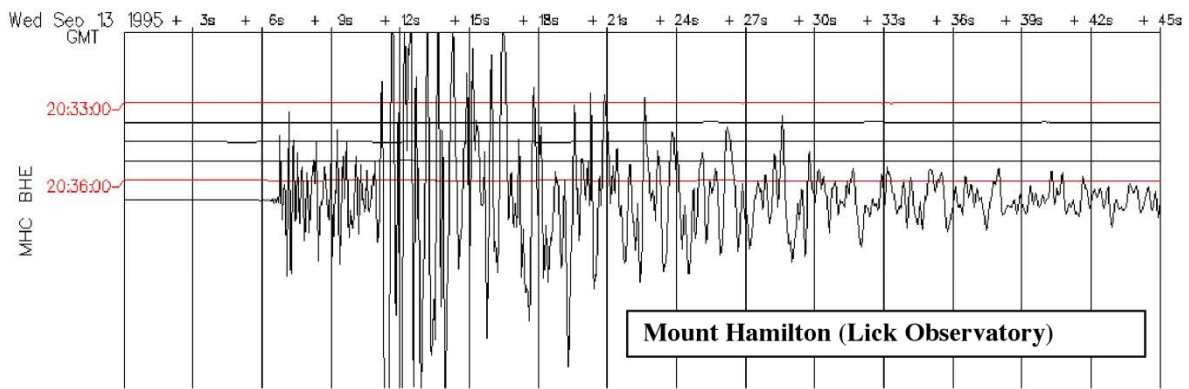
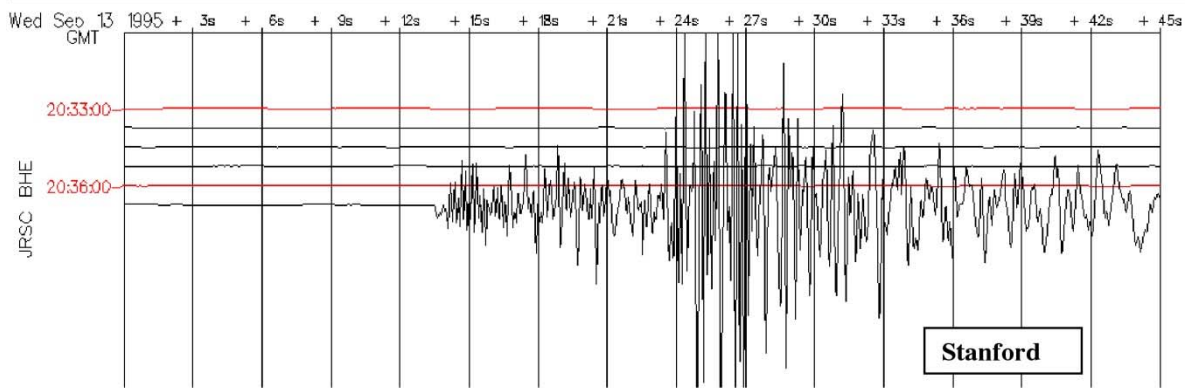
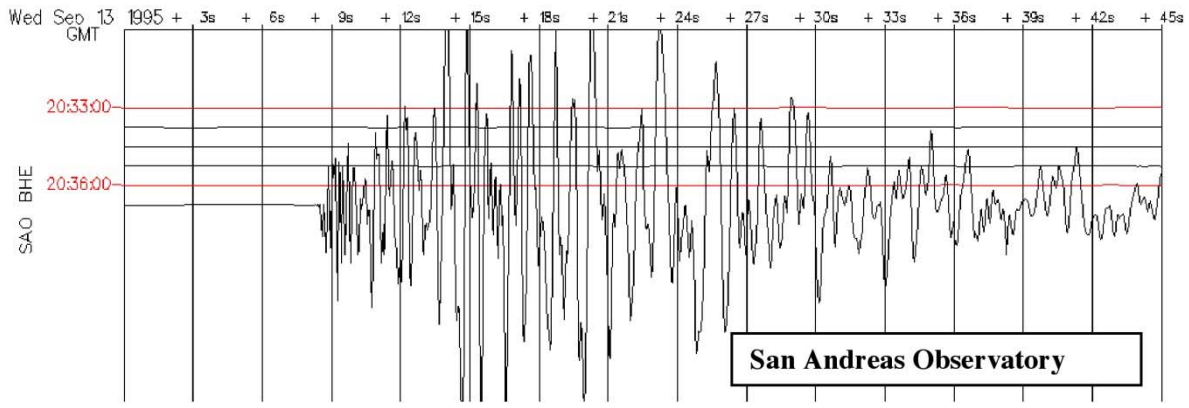
b. Draw a small circle indicating where you determine the epicenter to be.

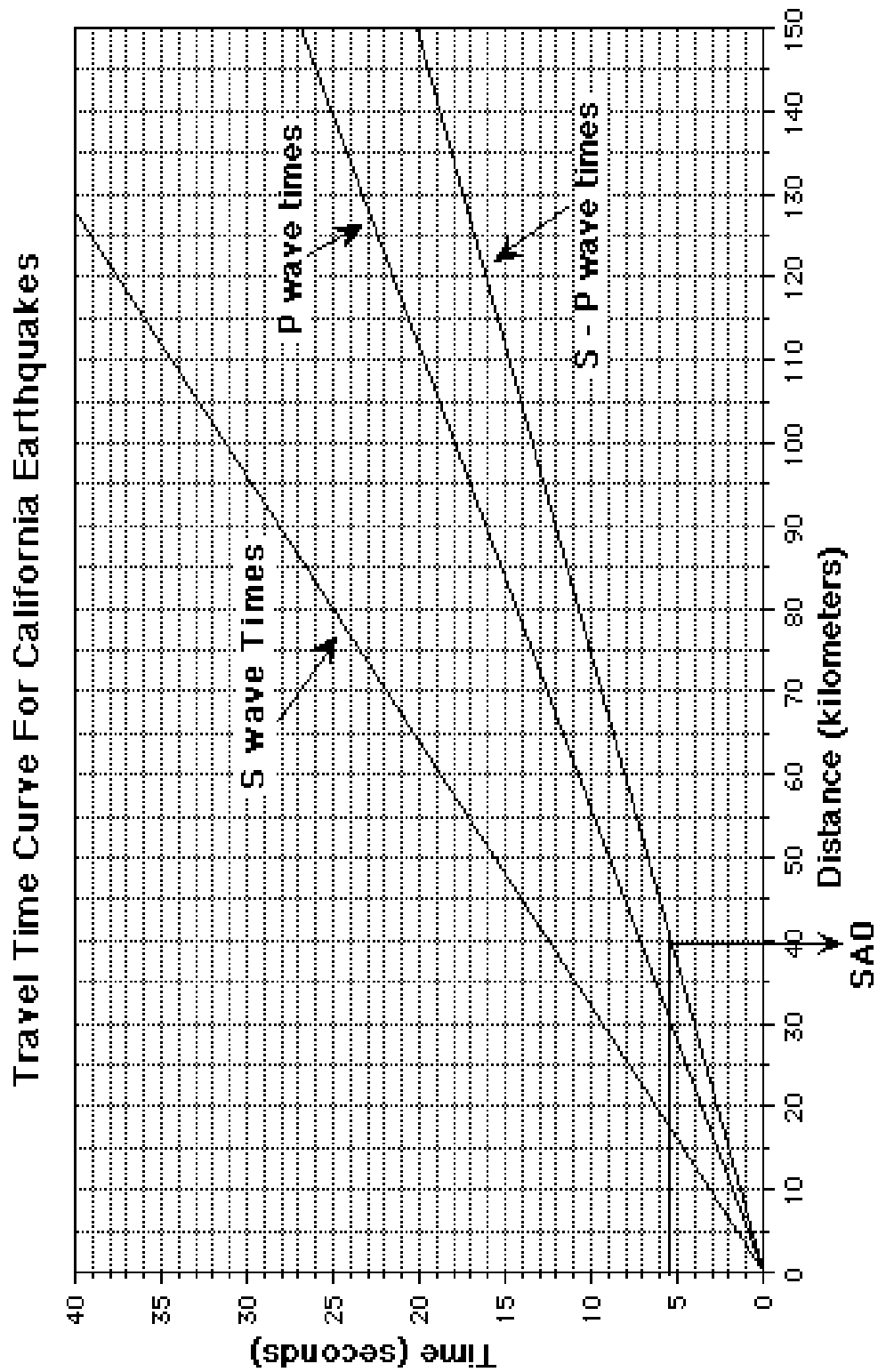
c. Which Bay Area fault do you think this earthquake is located on? _____

4. How many seconds did it take the P wave to travel to SAO? _____

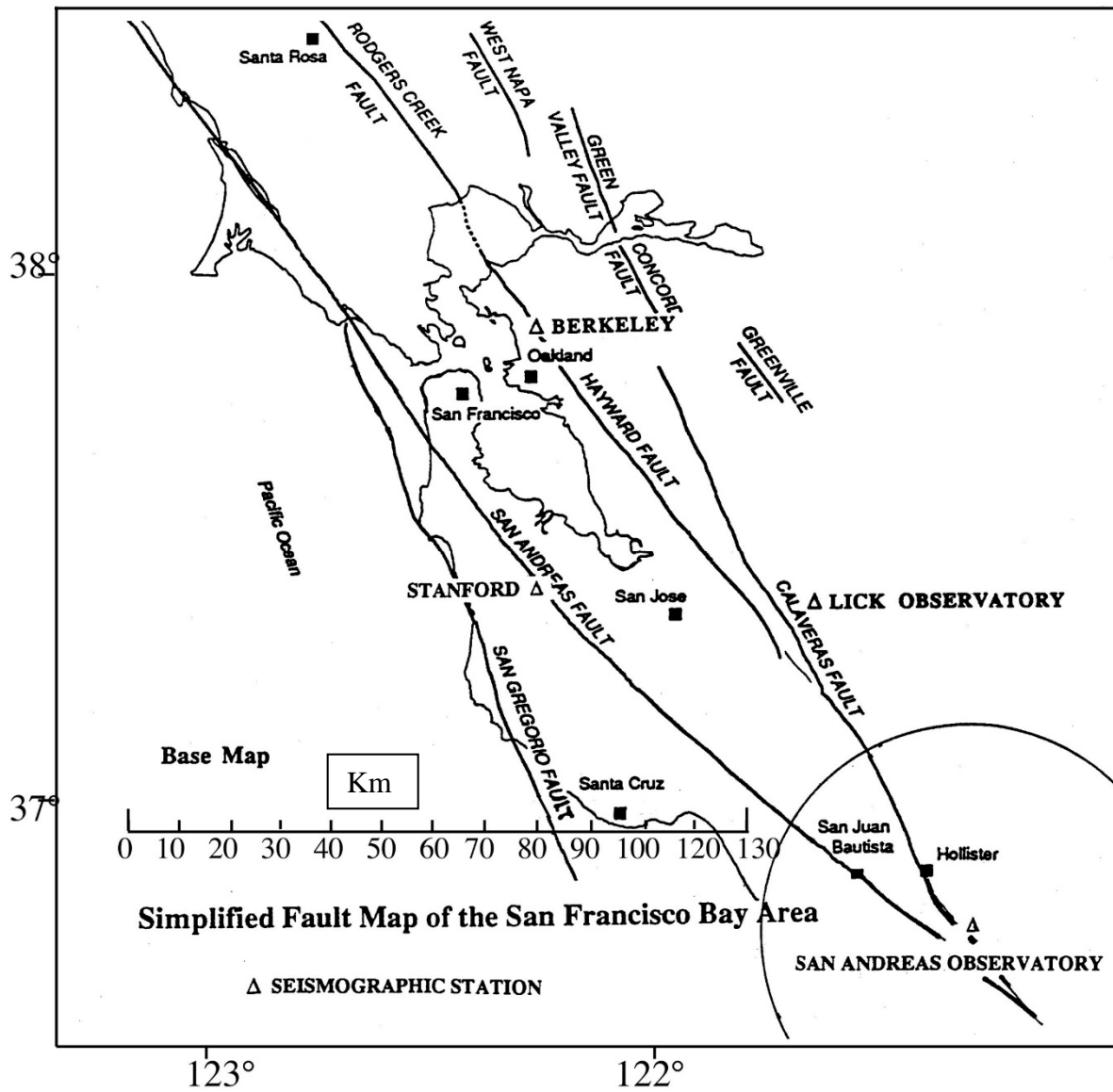
b. What is the origin time of this earthquake? _____ hour _____ min _____ sec

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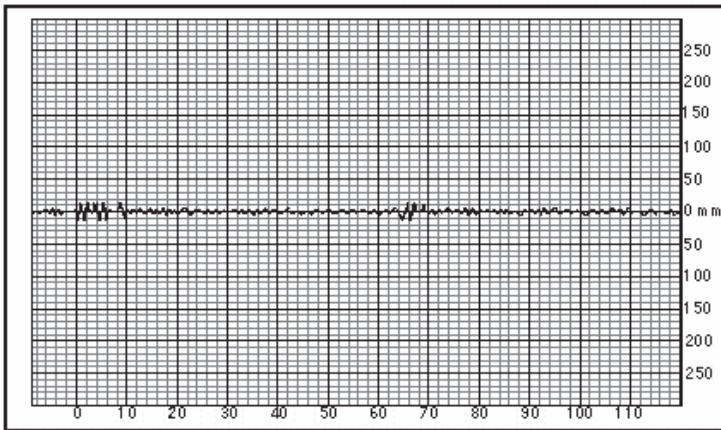
GEOL 10 B Lab 7 B: Earthquake Magnitude

Name: _____ Date: _____

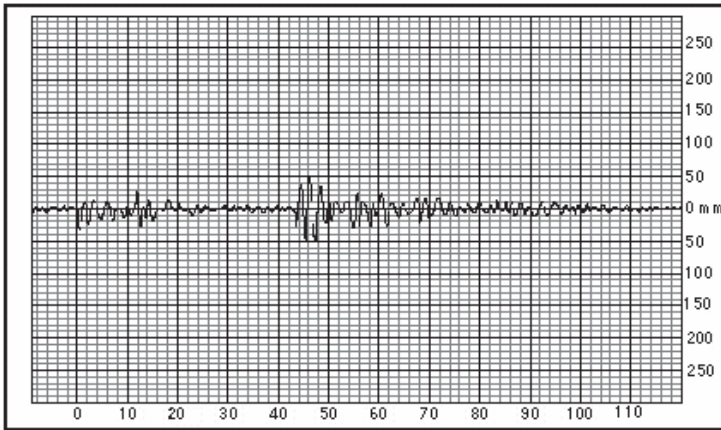
Estimate the max. amplitude for the S-wave (write the value below each seismogram). The distances from the stations to the epicenter are shown in the box above the nomogram.

Remember, where the three lines cross is the estimated Ms.

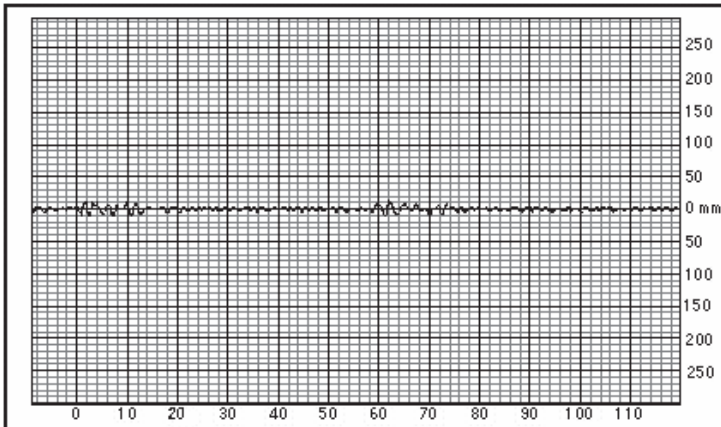
Write your estimate in the space at lower right. For full credit you should be within Ms 0.2 of "my" estimate.



max S-wave amplitude _____ mm

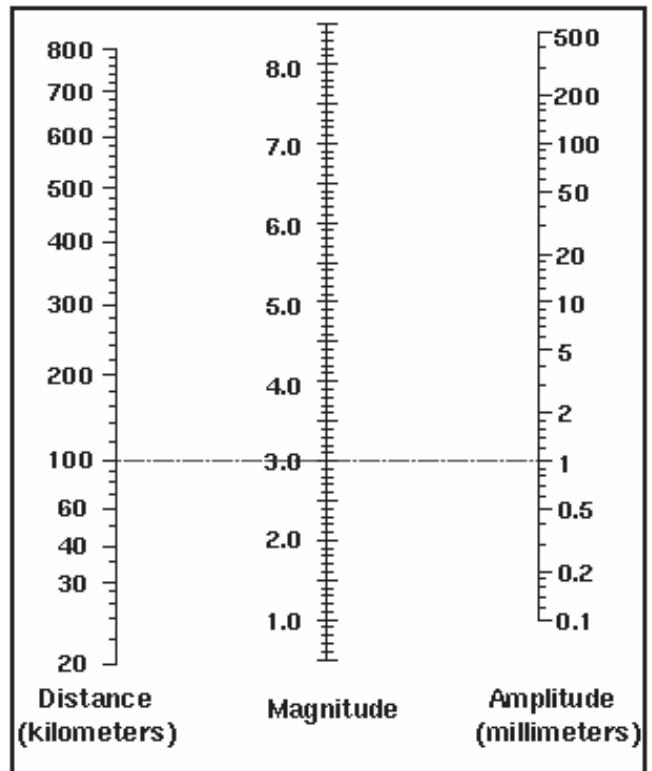


max S-wave amplitude _____ mm



max S-wave amplitude _____ mm

| Distance from Epicenter | |
|-------------------------|--------|
| Station A | 605km |
| Station B | 405 km |
| Station C | 585 km |



Estimated Ms _____