

PROGRAM UPDATE — July through September 2018

These quarterly reports provide information on the TexNet seismic monitoring program. The information is intended to be a high-level summary of this complex project and is written for a broad audience with an interest in seismicity monitoring and research in Texas.

Network Installation and Operations

- In response to a new sequence west of Cleburne, SMU deployed an additional seismic sensor in the area. SMU also relocated a sensor near Azle to better constrain depth of that ongoing sequence.
- The Bureau is tracking the number of unique users that visit the [TexNet Earthquake Catalog](#). The number of visits per month for July, August, and September was 946, 1,026, and 882, respectively.

Synopsis of July-September 2018 Seismicity in Texas

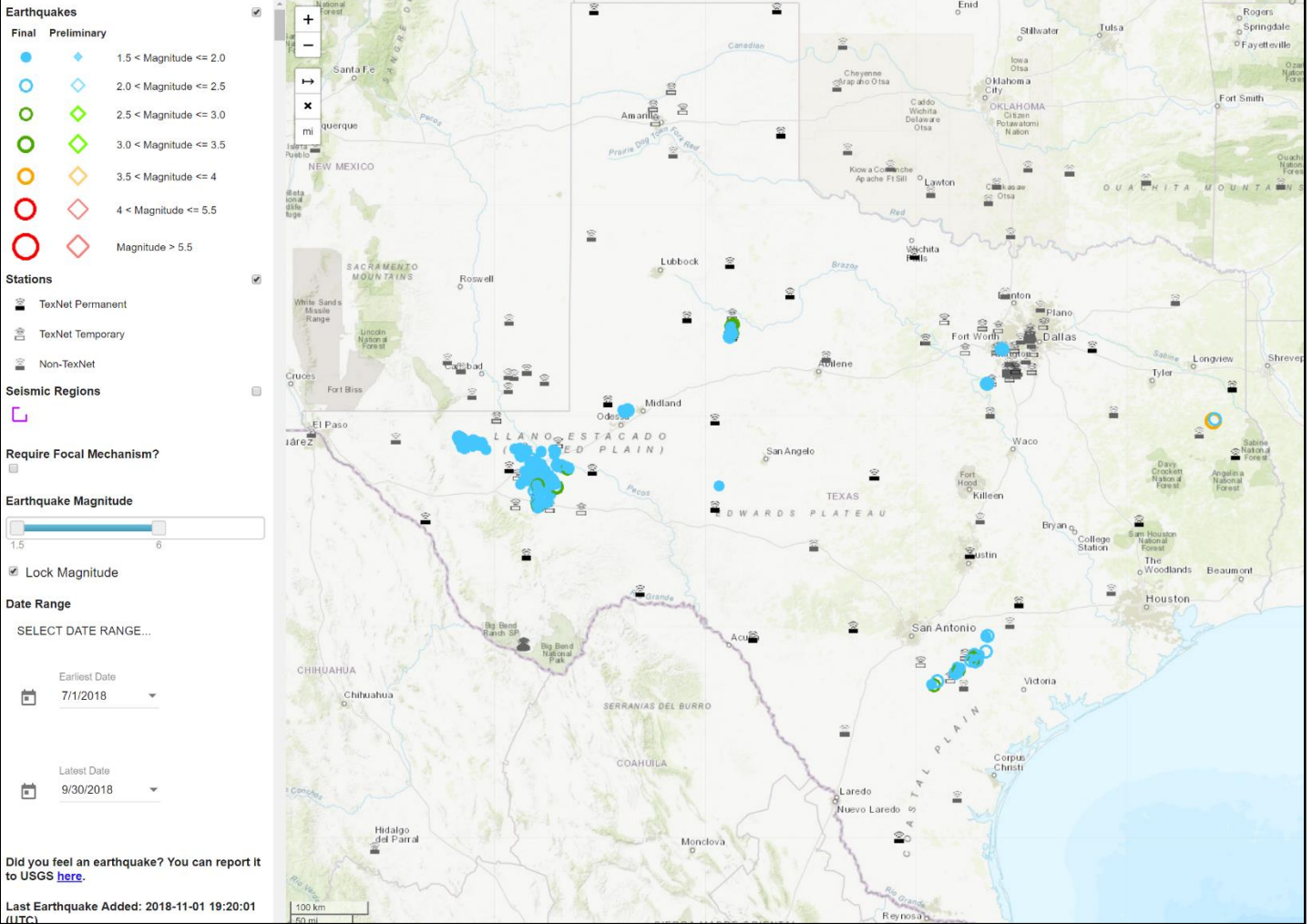
- TexNet provided locations for 773 earthquakes, 82% of which occurred in the Delaware Basin region. The remainder occurred west of Midland, north of Snyder, in the DFW area, in Timpson, and southeast of San Antonio. Of these 773 events, 586 earthquakes are finalized and 187, all $M_L < 1.5$, are provisionally located. Twenty-nine of the events were $M_L \geq 2.5$ and therefore in the realm of potentially being felt.
- The highest local magnitude event of $M_L = 3.6$ occurred near Timpson, Texas on September 4th.
- In the Fort Worth Basin, the SMU North Texas earthquake catalog reported 105 earthquakes. USGS received 10 felt reports stemming from the two largest events, both of which were associated with unnamed earthquake sequences: a $M_L 2.2$ earthquake in Ft. Worth in a region that has generated very small earthquakes previously, and a $M_L 2.2$ earthquake west of Cleburne, where 59 smaller earthquakes were recorded. Activity at known sequences near Azle and Irving-Dallas remained low, with only one earthquake associated with each sequence, and two small unfelt earthquakes occurring near Arlington. A total of 31 small earthquakes, all below $M_L 1.0$, were recorded near Venus in NE Johnson County.

Recruiting

- TexNet operations hired
 - Ms. Stefanie Whittaker, as a Project Manager for the daily earthquake analysis
 - Ms. Patricia Martone, as an Earthquake Analyst (RSA II)
 - Mr. Matthew Shirley, as a Field Engineer and Earthquake Analyst (RSA II)
- TexNet Bureau Seismology Team recruited Dr. Dmitrii Merzlikin, as a Research Associate specializing in signal processing.

Publication, Presentations, Partnership, and Outreach

- Jake Walter, Cliff Frohlich, and Taylor Borgfeldt published “Natural and Induced Seismicity in the Texas and Oklahoma Panhandles” in *Seismological Research Letters*.
- The 3Q2018 Technical Advisory Committee (TAC) meeting occurred October 2, 2018. Minutes can be download here: http://www.beg.utexas.edu/files/cisr/docs/2018-10-02_TAC_Minutes.pdf



TexNet Earthquake Catalog for July-September, 2018 which contains 427 $M_L \geq 1.5$ events.