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Paleoseismology of Crack-in-the-Ground Fault Central Oregon

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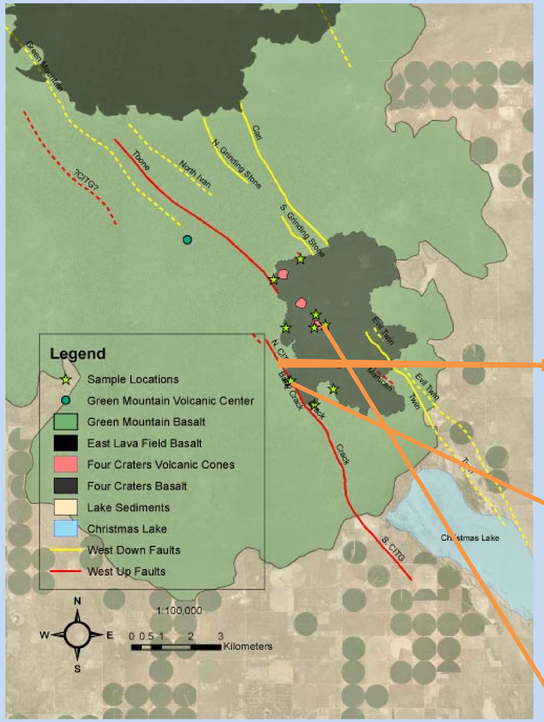

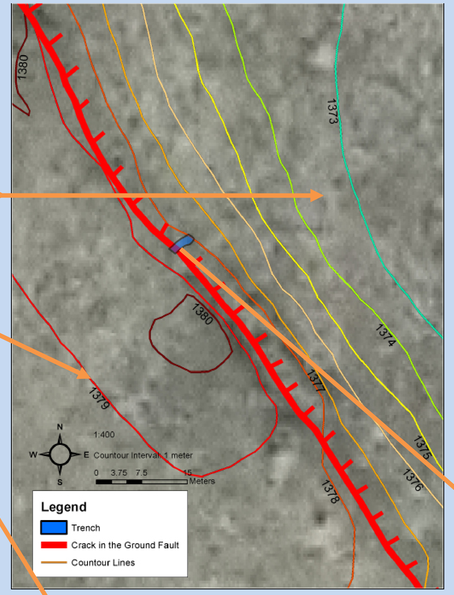

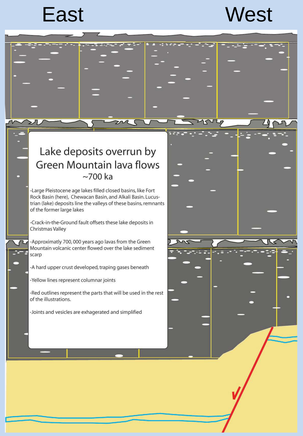

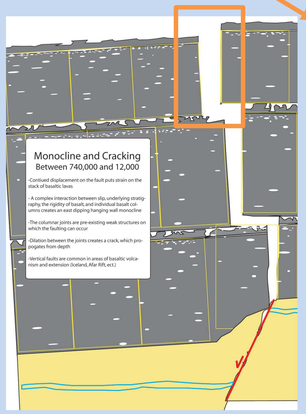

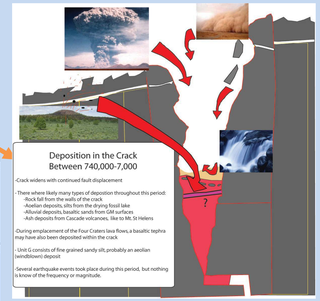

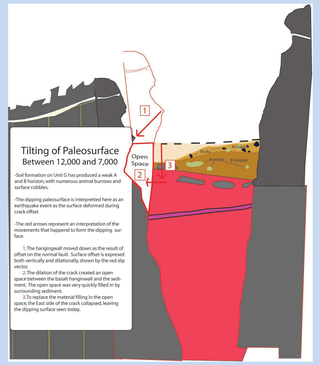

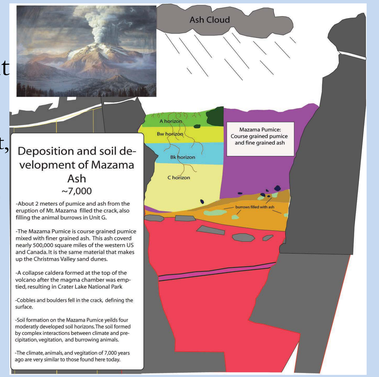

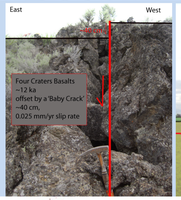

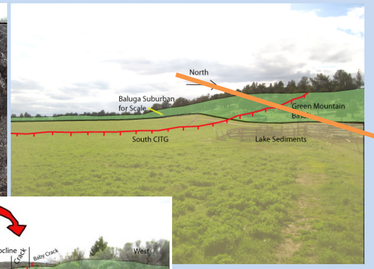

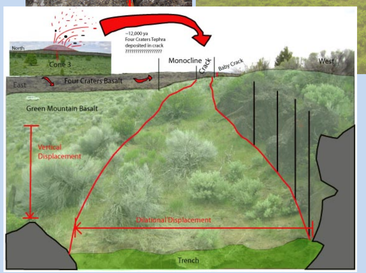

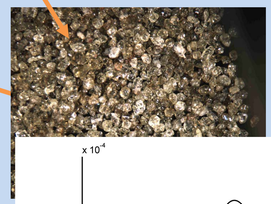

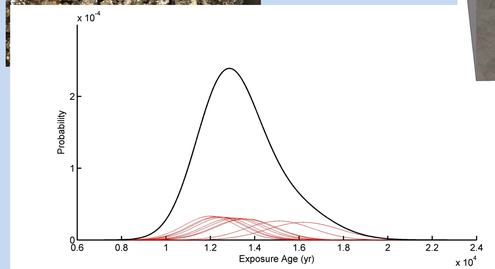

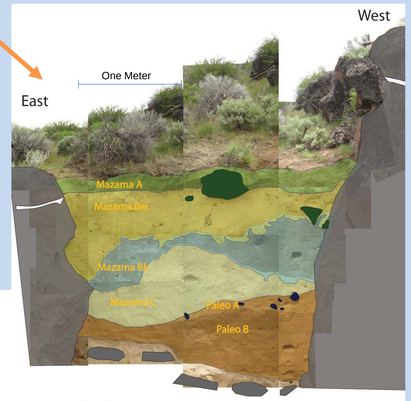

Interval 1:
~700 ka --- ~12 ka

10 m vertical offset
Green Mountain Basalt
740 +/- 40 ka (Jordan 2002)

Slip rate Pre Volcanism :
0.013 mm/yr

Interval 2:
~12 ka ---present

30 cm vertical Offset,
Four Craters Basalt
11,824 +/- 2,364 yr

Slip rate Post Volcanism:
0.025 mm/yr

Crucial Missing Evidence

-Basaltic Tephra from 4C below Mazama Ash

-Deformation of lower unit and Mazama is co-seismic

Future work

-The lake sediments to the South of the GM flows is a prime location for a future paleoseismic trench and will provide a deeper paleoseismic record. We will investigate the stratigraphy later this year
-Exposing deeper sediments at the current site may provide more insight to the Quaternary activity
-Physically modeling the co-seismic behavior of crack sediments will assist in the analysis of microstratigraphy
-More intensive regional mapping of the faults and relations to the lava fields will provide insight into the development of the system

Acknowledgements

-Dr. Ray Weldon, who introduced me to the area and provided valuable feedback, and his students Sean Bemis and Ashley Streig.
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