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Immense magma reservoir discovered beneath Yellowstone extending well beyond its caldera

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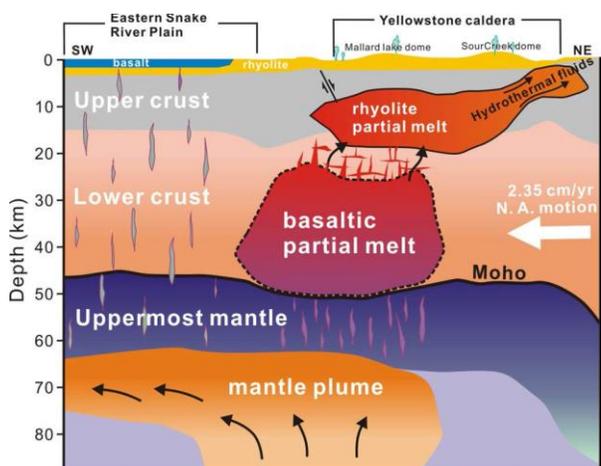
**University of Wyoming – National Park Service
2015 Harlow Summer Seminars at the AMK Ranch**

THURSDAY, JULY 23rd 2015, 5:30pm

***“Immense magma reservoir discovered beneath Yellowstone
extending well beyond its caldera”***

**Dr. Robert Smith, Distinguished Research Professor
University of Utah**

Dr. Smith will review Yellowstone’s volcanic and tectonic history followed by new research on the dynamics of the Yellowstone hotspot including: 1) His team’s recent discovery that the Yellowstone volcanic system extends from 2000 km in the Earth’s deep interior to the surface with magma ascending upward into a newly discovered lower crustal magma body then into a shallow crustal reservoir that connects to the surface. The shallow crustal magma body unexpectedly extends 15 km northeast of the Yellowstone caldera, well beyond Yellowstone’s volcanic field; 2) How this giant magma system fuels Yellowstone’s geyser-hot spring system including the world’s tallest geyser, Steamboat Geyser; 3) How migration of magma vertically into the shallow crustal magma reservoir pressurizes the unprecedented pattern of modern “up and down” ground motions of centimeters per year; and 4) How an interpretation of earthquakes and ground deformation supports the dynamics of lateral volcanic fluid migration from the magma reservoir laterally to outside of the caldera revealing the mechanics of Yellowstone’s “natural volcano pressure relief valve” that retards volcanic eruptions for thousands of years, but that can occasionally breach the surface and cause volcanic eruptions. Smith will also describe his team’s Yellowstone seismic and GPS network that is used to monitor earthquakes and volcano processes including the unprecedented uplift of up to 50 cm at Norris Geyser Basin that accompanied an earthquake of M4.9, the largest in over 40 years at Yellowstone, during a period of caldera-wide uplift. He will describe how large earthquakes are a much larger hazard than volcano risk in Yellowstone contrary to a common belief that volcanism is the highest hazard at Yellowstone. He will conclude by explaining how one can access the University of Utah’s Yellowstone real-time earthquake and GPS data; links to Yellowstone volcano and tectonic science information; images, maps, papers and key geo websites. In conclusion, Smith hopes to show that Yellowstone is indeed a *living, breathing, shaking, baking geologic park, par excellence*.



Source: *Science*, April 23, 2015

***Barbecue at 5:30 with
hamburgers, veggie burgers, hot
dogs, chips, salads and dessert
for a \$5 donation. The talk starts
at 6:30 in the historic Berol
Lodge at the AMK Ranch. Turn
right when entering Leek’s
Marina parking lot in Grand
Teton National Park.
Reservations not required.***

For further information contact Harold Bergman or Michael Dillon – (307) 543-2463 – Bergman@uwyo.edu
The UW-NPS Research Station is operated by the University of Wyoming in cooperation with Grand Teton National Park