The Blob Gallery

Adopt a Blog, Deep Earth Activity

Reference Blob

- Shape - spherical shell
- Size - *outer radius of 6371 km, inner radius of 3471 km - need to strip off crust or lithosphere here???*
- Location - global
- Temperature - mantle adiabat
- Material Properties - PREM

Blob 1

- Shape - a tabular body
- Size - 80 km thick, 3000 km wide, 5000 km long
- Location -
-

For instructors - "Farallon" , based on Schmid, Christian, Saskia Goes, Suzan van der Lee and Domenico Giardini, Earth and Planetary Science Letters, Volume 204, Issues 1-2, 30 November 2002, Pages 17-32;

Blob 2

- Shape - dome
- Size - 1200 km across, 1500 km tall
- Location - base at the core-mantle boundary
- Temperature -
- Material Properties -

For instructors - "African Superplume", based on Ni, Sidao, Eh Tan, Michael Gurnis, and Don Helmberger, Science 7 June 2002: Vol. 296. no. 5574, pp. 1850 - 1852, DOI: 10.1126/science.1070698

Blob 3

- Shape - cylinder
- Size - radius of 200 km, length of 2900km
- Location - vertically extended from base at CMB
- Temperature -
- Material Properties -

For instructors - "Hawaiian Plume", based on Wolfe et al, Science 4 December 2009: Vol. 326. no. 5958, pp. 1388 - 1390, DOI: 10.1126/science.1180165

Blob 5

- Shape - cone
- Size - 50 km wide, 25 km deep
- Location - top resting at Moho
- Temperature -
- Material Properties -

For instructors - "Sierra Nevada Drip", based on Zandt et al, Nature 431, 41-46 (2 September 2004) | doi:10.1038/nature02847

Blob 6

- Shape - cylinder
- Size - 600 km in radius, 250 km depth
- Location - extending vertically from 35 km below the surface
- Temperature -
- Material Properties -

For instructors - "Cold material in the transition zone"

Blob 7

- Shape - amorphous
- Size -
- Location -
- Temperature -
- Material Properties -

For instructors - "Warm material in the transition zone"

Blob 8

- Shape - amorphous
- Size - 10 km depth, 80 km wide
- Location - 10 km below the surface
- Temperature -
- Material Properties - 5-15% partial melt

For instructors - "Yellowstone melt anomaly", based on Chang, et al, Science, November 09 2007; Smith, et al, Journal of Volcanology and Geothermal Research, November 2009

Blob 9

- Shape - amorphous
- Size -
- Location -
- Temperature -
- Material Properties -

Blob 10

- Shape - amorphous
- Size -
- Location -
- Temperature -
- Material Properties -