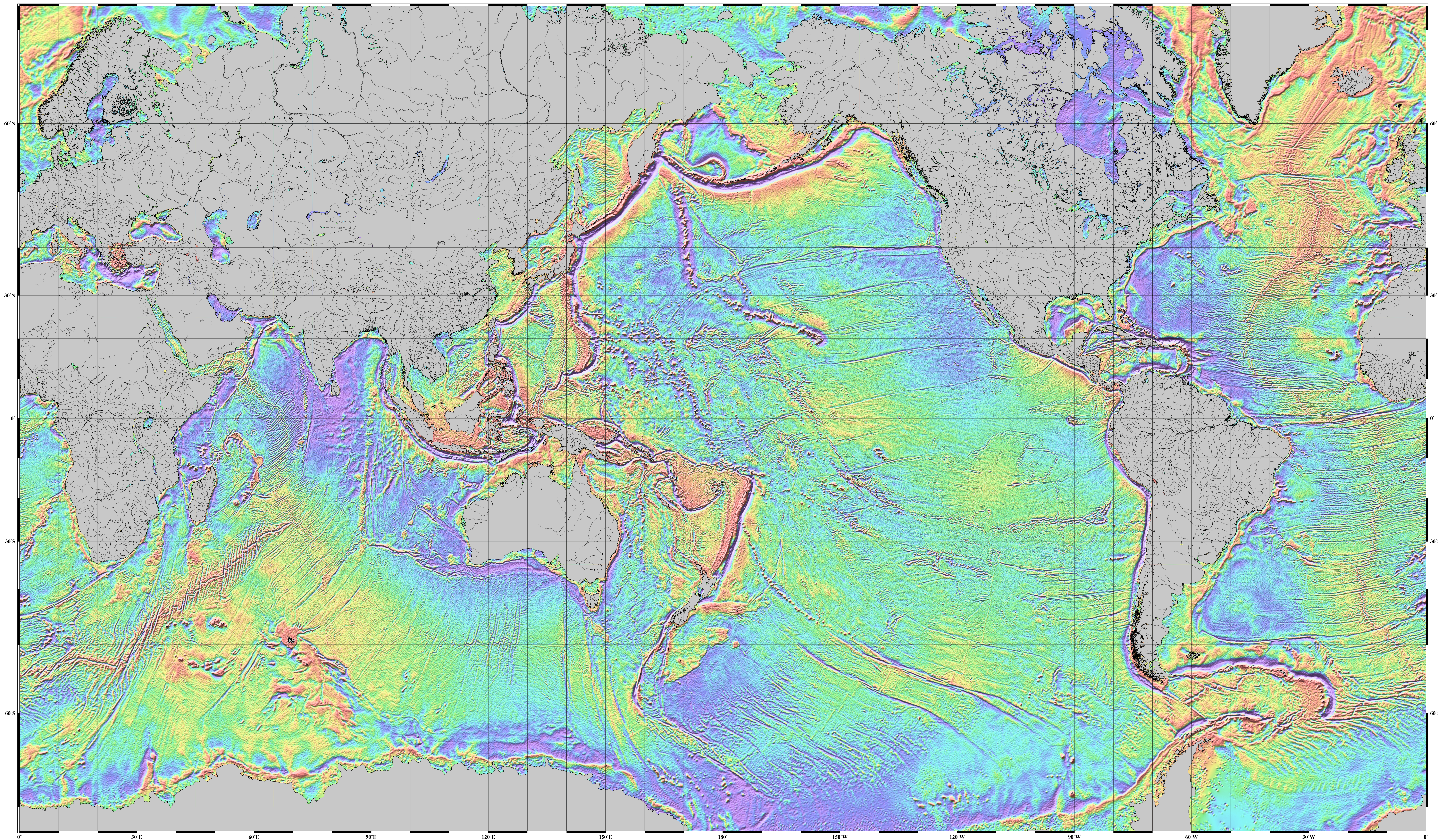
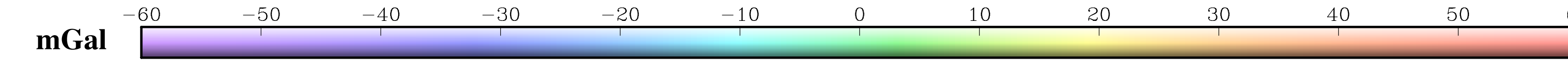


Marine Gravity Anomaly from Satellite Altimetry



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Geosat Data: U. S. Navy, The Johns Hopkins Applied Physics Laboratory
National Oceanic and Atmospheric Administration

ERS-1 Data: European Space Agency, French PAF/IFREMER

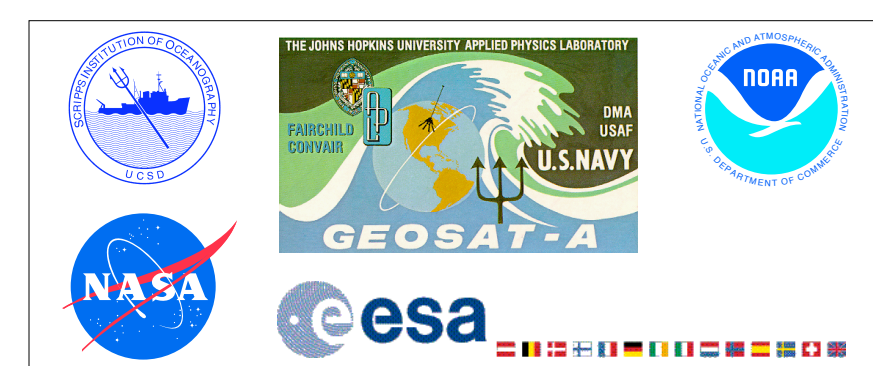
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Computer Graphics: Generic Mapping Tools

<http://www.soest.hawaii.edu/soest/gmt.html>

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The surface of the ocean bulges outward and inward mimicking the topography of the ocean floor. The bumps, too small to be seen, can be measured by a radar altimeter aboard a satellite. Over the past year, data collected by the ERS-1 altimeter along with recently declassified data from the Geosat altimeter have provided detailed measurements of sea surface height over all of the oceans. To enhance the features associated with the ocean floor topography, the sea surface height measurements were converted to variations in the pull of gravity (gravity anomaly). Green areas have essentially normal gravity, orange-red hues represent increasingly stronger-than-normal gravity, and blue-violet-magenta hues represent increasingly weaker-than-normal gravity. These data provide the first view of the ocean floor structures in many remote areas of the Earth. Applications include: studying the plate tectonic history of the oceans; locating uncharted features for planning shipboard surveys; locating all of the undersea volcanoes greater than 2000 meters tall; exploring for oil on shallow continental margins and correcting inertial navigation systems in submarines, missiles and commercial aircraft. (See McGraw-Hill Yearbook of Science and Technology, p. 178-180, 1995 and http://www.ago.noaa.gov/mgg/announcements/announce_prestid.html)