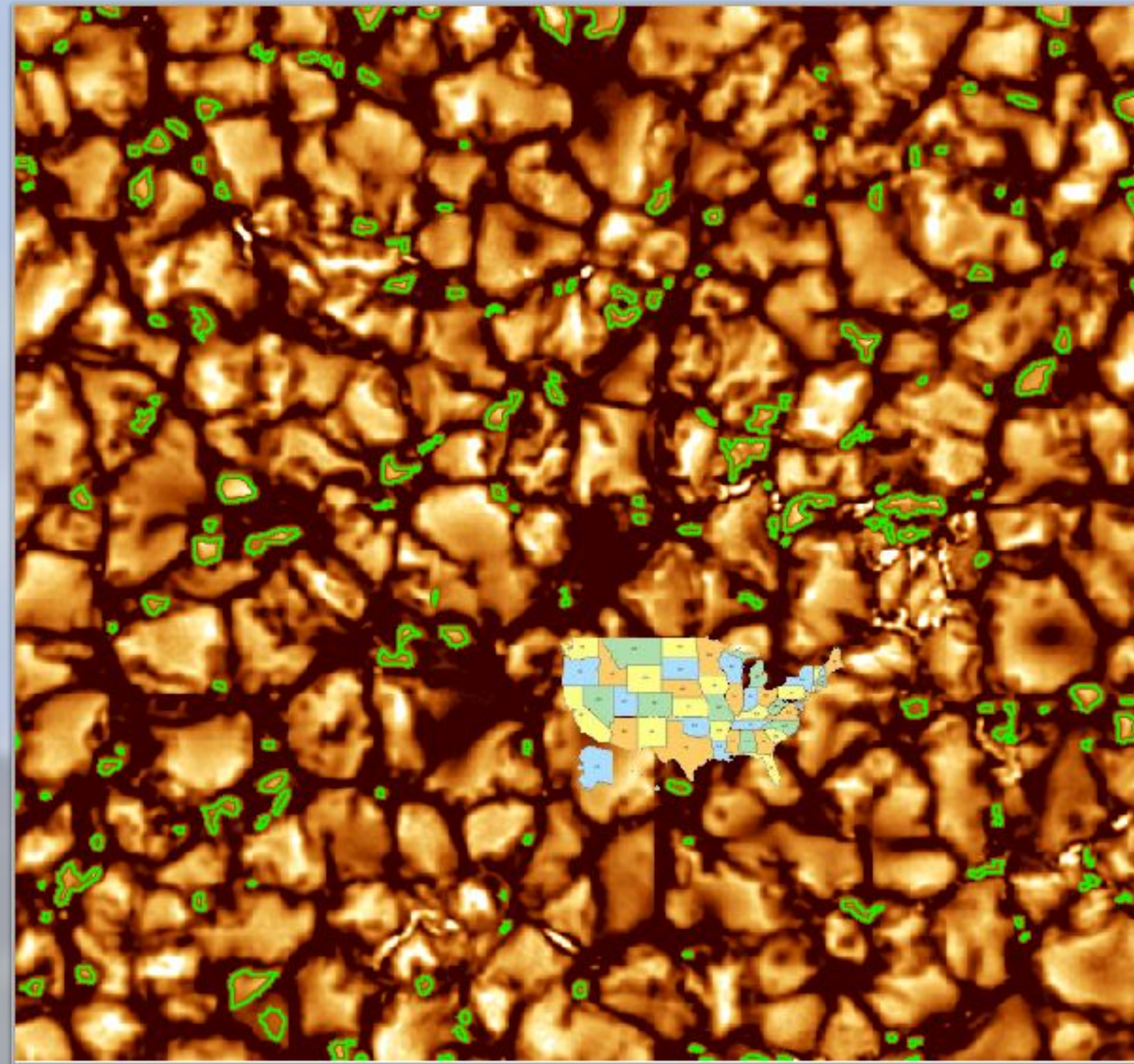




Big Bear Solar Observatory

BBSO is home to the world's largest aperture, and highest resolution solar telescope. The 1.6 meter primary mirror of the Goode Solar Telescope (GST) is housed in the first facility-class solar telescope made in the USA in a generation. The GST saw first light in early 2009. The telescope is outfitted with the latest technologies to make the highest possible resolution studies of our star, so we can understand the nature of the Sun and its dynamics, which have such a profound impact on our life on Earth. The Sun not only keeps us warm, but its magnetic storms can damage satellites and disrupt the power grid and communications. The telescope is located in the lake because the lake provides a natural inversion that minimizes the image blurring caused by atmospheric turbulence.

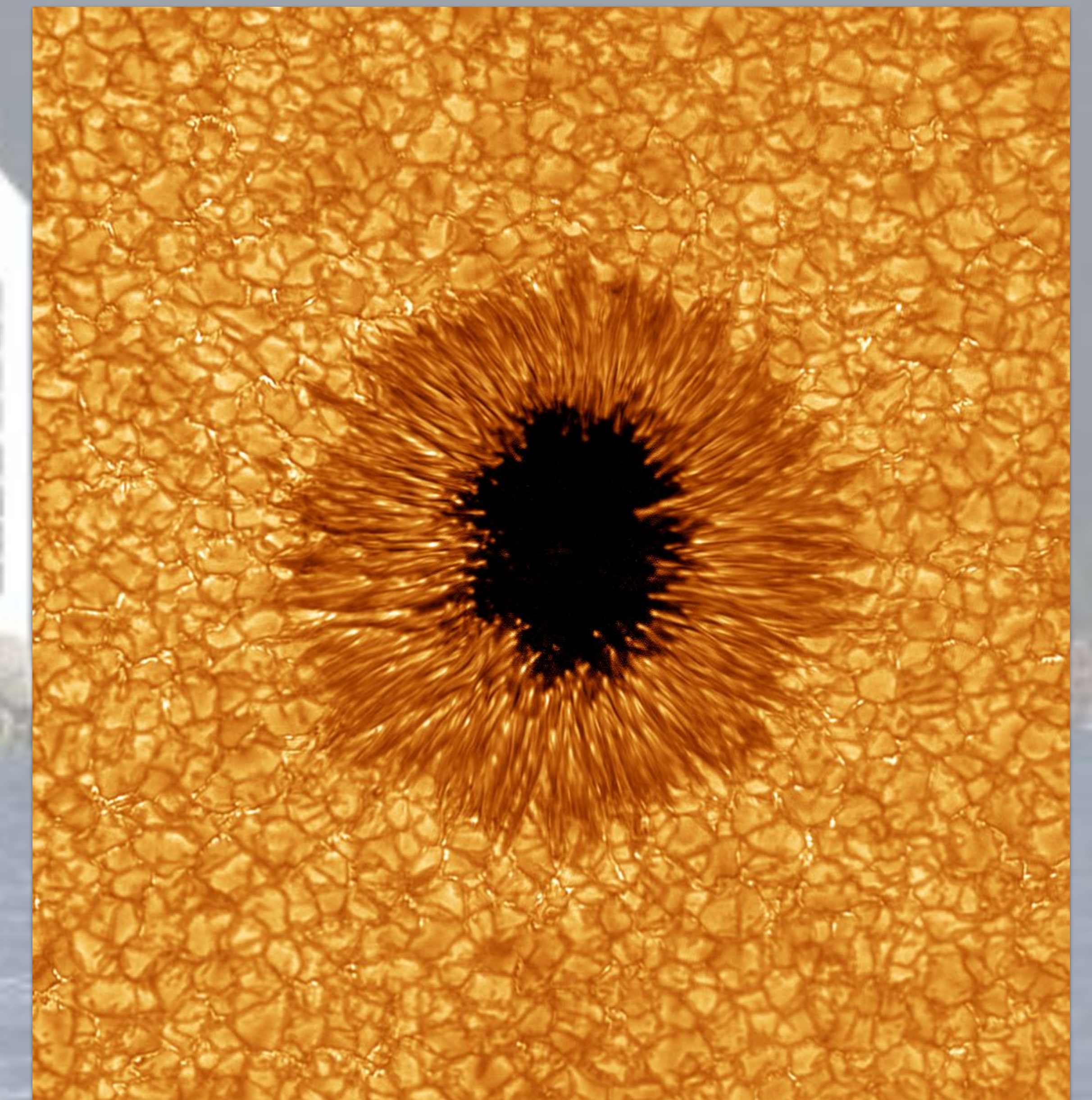
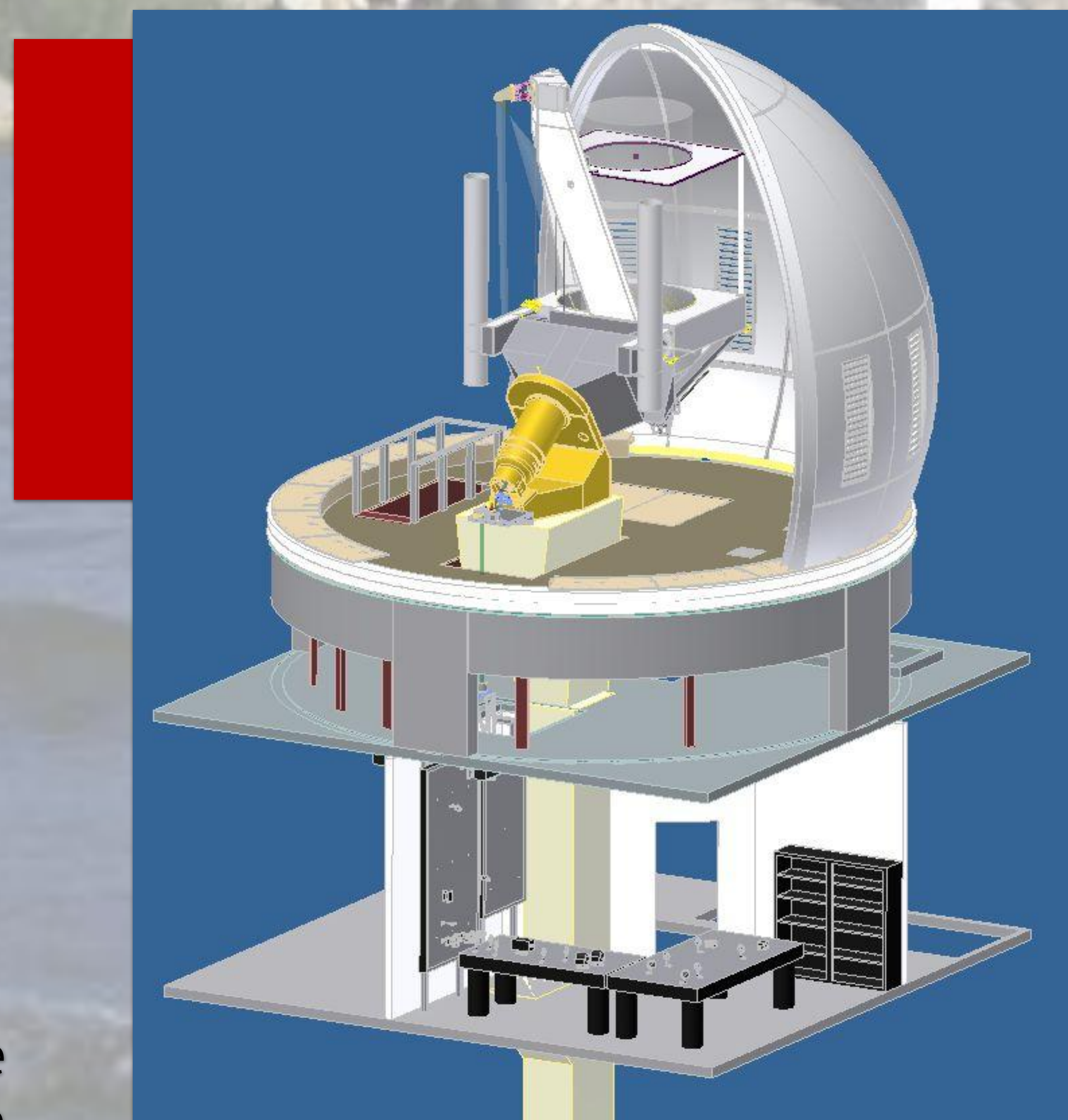


Above is a picture of new observations of solar granulation which reveal very small mini-granules (green contours) visible between the normal solar granules. Granules are similar to bubbles in boiling water. They are driven by heat from below. An average granule is one thousand miles across. These mini-granules, as small as New Jersey, form multi-fractal structures similar to other systems in nature.

Below: A small sunspot (dark) surrounded by its penumbra (elongated fibrils). The penumbra is then surrounded by the Sun's ubiquitous granular field. The individual granules are the bright cells that can be as large as California. For perspective, the Earth is slightly smaller than the sunspot. The French science magazine, Ciel et Espace called this July 2, 2010 image the most precise picture of the Sun ever. National Geographic's editors selected the picture below as one of the ten "Best Space Pictures of 2010".



The primary mirror cell is clearly visible beneath the GST structure in this image



The off-axis GST design allows light to be focused without a shadow from the secondary mirror. The schematic at the left indicates the optical path through the GST to the labs below. The optical tables in the lower level house instruments that correct atmospheric distortion, measure magnetic fields, and record solar images.

*For more information go to