lachians (SN: 6/9/79, p. 374; 10/20/79, p. 265), but there the record of stretching, or extension, seen in the Basin and Range is not observed.

The mechanics of extension along detachment planes remain "enigmatic," Allmendinger reported. There is abundant evidence that the crust pulls apart on very low-angle faults, but it "appears mechanically impossible," he said. If, as expected, the crust becomes weaker as it is stretched, it would seem more likely that the slabs would break up into blocks bounded by steep faults. The COCORP reflections show that this is not the case.

The COCORP data are obtained when pads on the trucks pound the ground, sending seismic waves vibrating through the earth. When the waves reach the Moho, their echoes are reflected back to thousands of small seismometers spaced along the route and relayed back to a truck where the information is recorded. While the seismic profiles are invaluable in discerning details of the continental crust, they leave many questions for scientists to ponder. For instance, no one can say exactly what caused motion on the faults to reverse. It may be related to the end of subduction of the Pacific Plate along what now is the California coast, and to the activation of the San Andreas fault, which cuts from north to south.

One provocative — and highly speculative — outcome of the recent survey is the possibility that the thinness of the crust in the Basin and Range may not be due to this episode of stretching, but instead was caused by the previous period of thrusting and compression. The classical view of the Moho is that it represents a change in composition from the silica-rich material of the crust to mantle material, which is called ultra-mafic. Oliver says that instead (in some locations) the lowermost slab may have been subjected to so much pressure by the heavy slabs rammed on top of it that it may have subsided. Exposed to high temperatures and pressure, the minerals in the slab might have changed phase — become other kinds of minerals but with the same basic chemistry. A phase change, like a change in chemical composition, would affect the seismic and physical properties of the minerals. At that point, Oliver suggests, "it might be that some of the crustal rocks would turn into something that we would identify as mantle." Such a change would result in a thinner crust.

If this finding can be substantiated, it would lead geologists to revise their view of the Moho. Doug Nelson, a Cornell researcher and a COCORP research associate, says that if a phase change can be demonstrated through petrology and geochemistry, "it would be a very dramatic result" that would change views of the continental crust and how it evolved. "It will be interesting either way it goes," he says. "We're all enthused with this data set."

—C. Simon

Help wanted: To seek an asteroid's moon

Do some asteroids have their own satellites? There have certainly been some tantalizing hints. On several occasions, astronomers watching a star apparently blink off and on as an asteroid passed in front of it have noted brief "secondary blinks" shortly before or after the main event, as though other objects in the asteroid's vicinity were getting in the way. Yet the possibility has been a matter of controversy for years, even as the list of asteroids with possible "companions" has continued to grow. The reason is that the evidence has always been frustratingly inconclusive, usually because the observers were too few or too close together to provide differing viewing angles that would confirm that a secondary event indeed represented an object orbiting the asteroid, rather than some unrelated object that merely happened to be crossing the line of sight.

Late this month, however, there may finally come a chance to confirm the existence of at least one such asteroidal moon — if enough observers, from professionals with specialized instruments to rank amateurs with binoculars, will join in the cause.

On Saturday night, May 28-29, a star known as 1 Vulpeculae will be briefly occulted, or blocked out, by the large asteroid Pallas, at least to observers (who will be legion) along a narrow path across the southernmost United States and northwest Mexico. The position of this primary occultation track is well known in advance, based on calculations of the asteroid's orbit. But if Pallas has a moon, *that* occultation may turn out to be visible only from as yet unknown locations somewhere in a wide area that includes almost all of North, Central and South America as well as parts of Africa. And the signs that Pallas indeed has a moon include what has been called "the best evidence yet."

Various secondary occultations near Pallas were reported in the early 1970s, and another in 1978, says David Dunham of the International Occultation Timing Association, which encourages and coordinates such observations. But in 1980, E.K. Hege and colleagues from Steward Observatory in Arizona produced an image by a technique called speckle interferometry (unrelated to occultations), in which the asteroid appeared to have a bulge on one side, as though another object were present but too small and nearby to be separately resolved by the telescope (SN: 11/8/80, p. 295).

The occultation track of such a moon is unknown because the rotation axis of Pallas (and the plane of the suspect moon's orbit) is nearly pole-on to the earth. Thus Dunham and others hope that observers throughout the country will try to spot a secondary blink, even from sites where the main blink is not visible. Interested

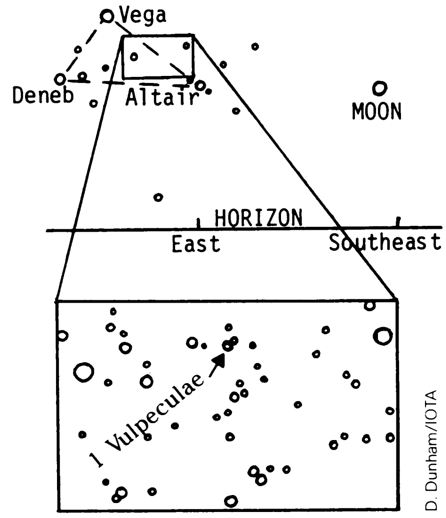

Diagram shows position of star that may be occulted by a moon of asteroid Pallas.

watchers should look at 1 Vulpeculae (binoculars will do) for about 15 minutes, starting at 12:50 a.m. EDT on May 29. The star is located within the "Summer Triangle" formed by the bright stars Vega, Deneb and Altair (see diagram). But establishing the time of such a blink is critical in combining the observations. Set a digital watch (to the second) from WWV shortwave broadcasts or an accurate telephone time source (the U.S. Naval Observatory's is 202-653-1800 in Washington), and dictate your starting, ending and observed occultation times to a tape recorder (or an assistant) as you look. Indicate your location to within 200 feet if possible (such as by reference to a street intersection), and send your report to IOTA, Box 596, Tinley Park, Ill., 60477. Help discover a moon. And watch this space.

—J. Eberhart

Oversight groups for supercomputers

Three government study groups will oversee the federal role in developing and using new "supercomputers," the White House announced last week. The move is part of an effort to keep U.S. supercomputer technology ahead of foreign competition, particularly from Japan.

Supercomputers are the fastest and most powerful scientific computers available. These computers have special characteristics that allow them to perform calculations up to 80 times as fast as the largest general-purpose computers. Supercomputers are used in weather forecasting, scientific research, aircraft and weapons design, seismic data analysis and even for animation and special effects in filmmaking. About 60 supercomputers are