A careful investigation should be made with the infrared reflection spectrometer and Cashman cell, and also a polarimeter to determine if the color of the Martian deserts is due to the natural color of felsite igneous rock, or whether it is due to oxidation of iron. With the same instruments, the green temporary maria in the sub-Antarctic zone should be tested for chlorophyll immediately following the summer solstice of the southern hemisphere, since this is probably the only place and time on Mars that it does not freeze at night.

A sharp lookout should be made for any atmospheric "blue-clearings" that may occur, and to correlate such phenomena with solar activity. Similarly, observers should watch and report luminous projections beyond the terminator.

The tendency of certain regions to whiten with frost and cloud, and other regions to darken with the passage of water vapor across the planet should be carefully noted, as these would indicate topographic relief and should be correlated with both spectrographic and radiometric observations. Such data can contribute much to our knowledge of the diastrophism of the Martian crust.

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Underhill, Anne B. The shell star 48 Librae.

Radial-velocity observations of 48 Librae from high-dispersion plates are presented for the years 1950 to 1953. In this interval the radial velocity from the shell lines reached a maximum of 20 km/sec in 1951 and decreased to about -30 km/sec in 1953. The detailed differences between the velocities given by the shell lines of *H*, *FeII*, *TiII*, etc., are the same as those noted recently by P. W. Merrill. As a member of the Scorpio-Centaurus cluster, 48 Librae should have a radial velocity of -4.9 km/sec, but no purely stellar features could be measured for radial velocity.

The strength of the metallic absorption lines of the shell has been compared for each year. On the whole the shell spectrum had the same strength in 1950, 1952, and 1953, but in 1951, the time of maximum velocity, the measured equivalent widths of the shell absorption lines were about 25 per cent greater than those in the other years. Curves of growth were made each year for *FeII*, *FeI*, *TiII*, *VII*, *CrII*, and *CrI*, and the excitation temperature and electron pressure were estimated with the following results:

	1950	1951	1952	1953
T_{exc}	8200°K	9900°K	8400°K	8600°K
$\log P_e$	2.1	2.7	1.6	1.8

The strong lines of the metals with high second ionization potentials such as *FeII* and *CrII* are found to be asymmetric, the red side being sharper than the violet side. This asymmetry did not change from 1950 to 1953. The lines of *TiII* and all of the weak lines are symmetrical throughout the period of observation and appear as though they are broadened by macroscopic turbulence. Evidence is presented for believing that the asymmetric lines are composite in structure, a sharp core displaced slightly to the red and arising from an outer shell of low density, being superimposed on a symmetrical line like the *TiII* lines.

Observations of the emission at *H α* and *H β* in 1950, 1951, and 1953 are presented. The changes in the shape and strength of these emission features vary with the velocity changes in the manner previously noted by Struve and by Sanford and Merrill. The great width of the emission feature at *H α* is significant. It is suggested that this width is evidence in favour of the conclusion that the rarefied volumes of gas giving the shell emission spectrum are moving with large chaotic velocities.

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Van Biesbroeck, G. A rapid method of obtaining positions from wide-angle plates.

In determining equatorial coordinates from measures on photographic plates, the highest precision is not always required. In asteroid work, for instance, an accuracy of a couple of seconds of arc suffices in most cases. By the use of a modern precision theodolite set up at a distance from the plate equal to the focal length of the telescope with which the plate was obtained, it is possible by proper orientation to read off directly the equatorial coordinates as azimuth and altitude. If the orientation is obtained with *Astronomische Gesellschaft* or Yale stars the positions will be referred to the 1950 equinox, thereby doing away even with the computation of precession. A precision of 2" is obtained practically without computation. The method is used to get the positions of hundreds of asteroids recorded on survey plates taken with a 10-inch telescope at the McDonald Observatory.

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