

U.A.I. SATURN SECTION

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An Italian group of Saturn observers dates back to 1972, and it was included as a Section of the Unione Astrofili Italiani in 1975, has the aim to promote and organize Saturn observations on a national basis and to elaborate results obtained by visual and photographic techniques, both as regards the planet, its rings and its brightest satellites. Though the vast majority of contributions to this Section come from Italian amateurs, we regularly receive observations from people of other countries too, especially from England, Spain and Switzerland.

Our Saturn Section, as other similar organizations, is especially efficient in collecting statistical data regarding the intensity, colour and position of the permanent and semi-permanent features, both on the globe and ring system. Visual observation is the favoured method of research, since almost all of us have rather modest equipment — usually a 15 or 20 cm Newtonian reflector — even if a few have supplied in the past some good photographs accompanied with photodensitometric analysis of the negatives.

All taken into account, we are aware that the power of our work is the ability to collect a large amount of numeric data from many independent observers, who judge by subjective estimates, with a consequent uncertainty, but they are so numerous that significant values can be inferred when statistical analysis is applied. Indeed, our visual methods are easily understood and applied even by the unexperienced enthusiast or the non-technically minded observer.

Fig. 1 shows how the Saturnigraphic latitude of some belts of the planet varied in about six years; the first graph refers to measures on drawings made by our visual observers, while the second graph reports measures from photographs. SEB North and South components, as well as the SPR, are graphically enhanced by oblique shading. The accordance between the two graphs is generally acceptable, and both set of data, point to at least one major variation occurred on Saturn: the Northern shift of the North polar shading.

There is one topic that is not routine work on Saturn, but has nonetheless the utmost importance, perhaps the most stimulating aspect of Saturn observing: the monitoring of transient spots which occasionally occur on the globe.

Recent results suggest that the occurrence of spots on Saturn may not be infrequent, though the planet's major distance from the Sun with respect to Jupiter implies a lesser atmospheric activity; almost every year some feature is recorded on the belts and zones, especially on the equatorial region, by major instruments working in sites favoured by good seeing. It is quite frequent that unexperienced observers claim to have seen a detail in fair seeing with a modest equipment, but in such cases, as a rule, an optical

or psychological illusion has occurred instead. However, sometimes the spot is big and real beyond any doubt: this has been the case for the white equatorial spot discovered by the then-directors of our Section, E. and P. Sassone Corsi, on 1978 March 5, which remained visible, though with declining sharpness, for over a month, and was followed by other European observers too.

As regards the satellites of the planet, though a handful are easily visible in little-sized telescopes, the usefulness of our work has been severely limited by the explor-

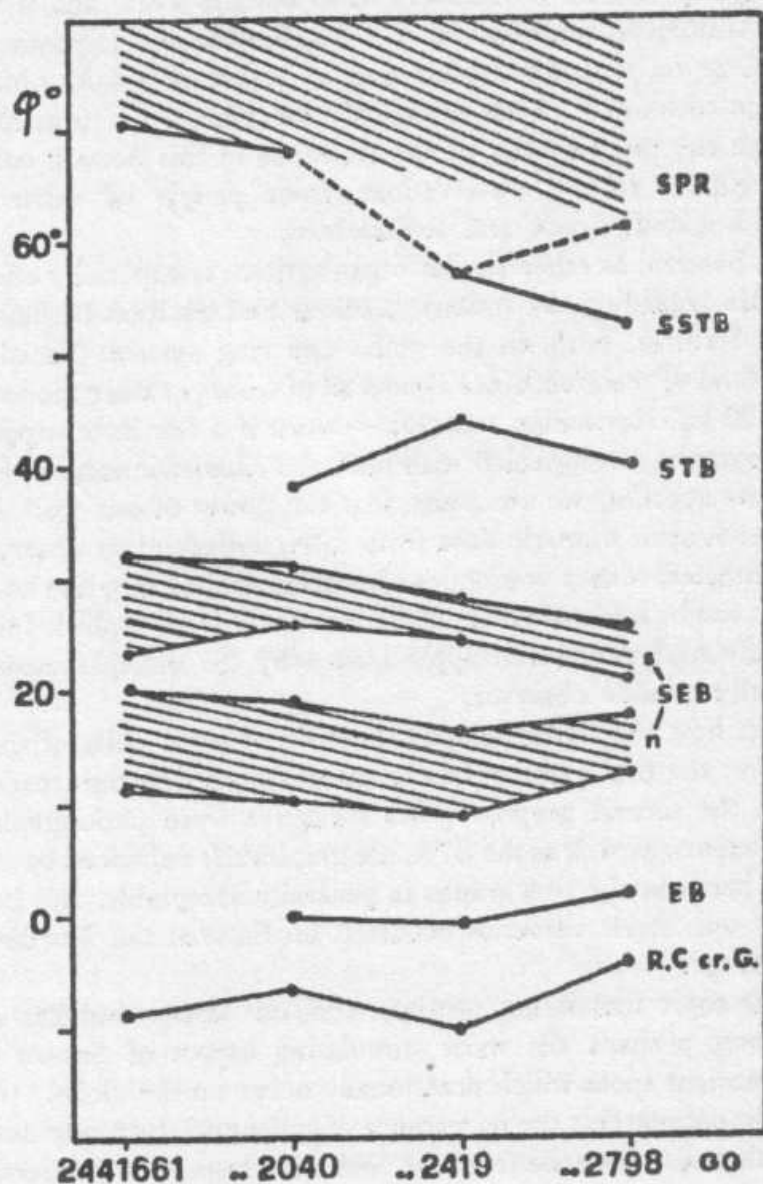


FIG. 1

Latitude variations of planet's different belts from 1972 to 1976.

ations of the Voyagers, which have transformed what appeared as tiny points of light in thescopes in worlds on their own, with mountains, plains, craters, faults and com-

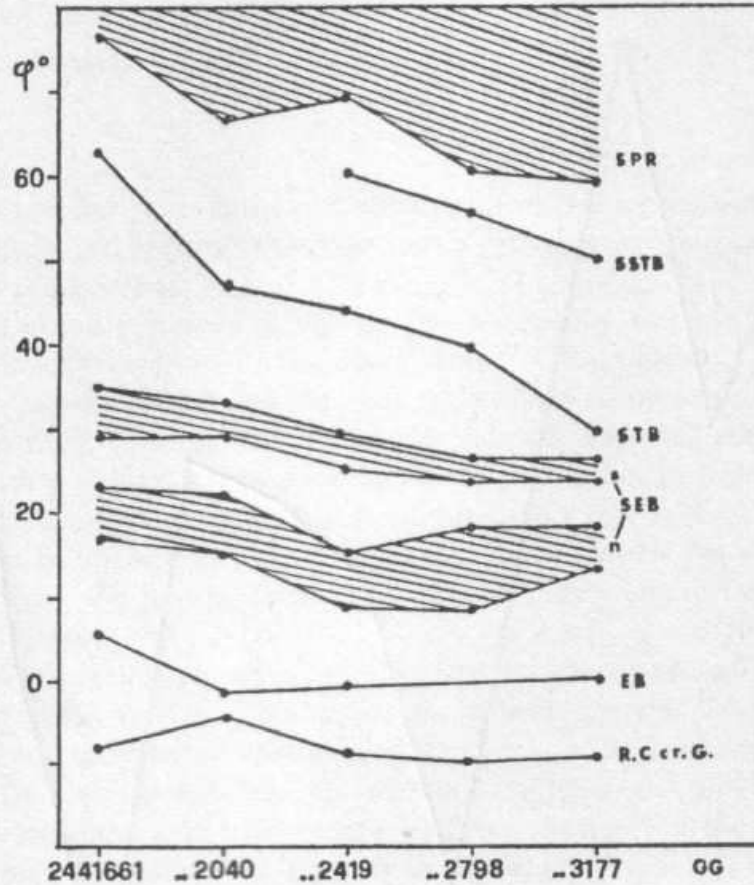


FIG. 2

Latitude variations of globe's different belts.

plex and possibly very different geological histories. However, one satellite raises scientific questions that apparently give sense to some further amateur observing: that is Titan, with its very thick atmosphere of carbon compounds which hides the surface and seems subject to considerable changes on a time scale of months or even less. There are variations in intensity and colour. Colour variations may be rendered evident using filters and, in effect, such an observational effort has been conducted in recent years by our Section, together with other European amateurs, and is still conducted by some individuals. However, in spite of the vast amount of data gathered, no conclusive result has been reached till now, so we can suppose that visual observations cannot bring to evidence real variations of this kind. But, on the other hand,

we cannot be sure of this conclusion before some further monitoring of Titan is accomplished.

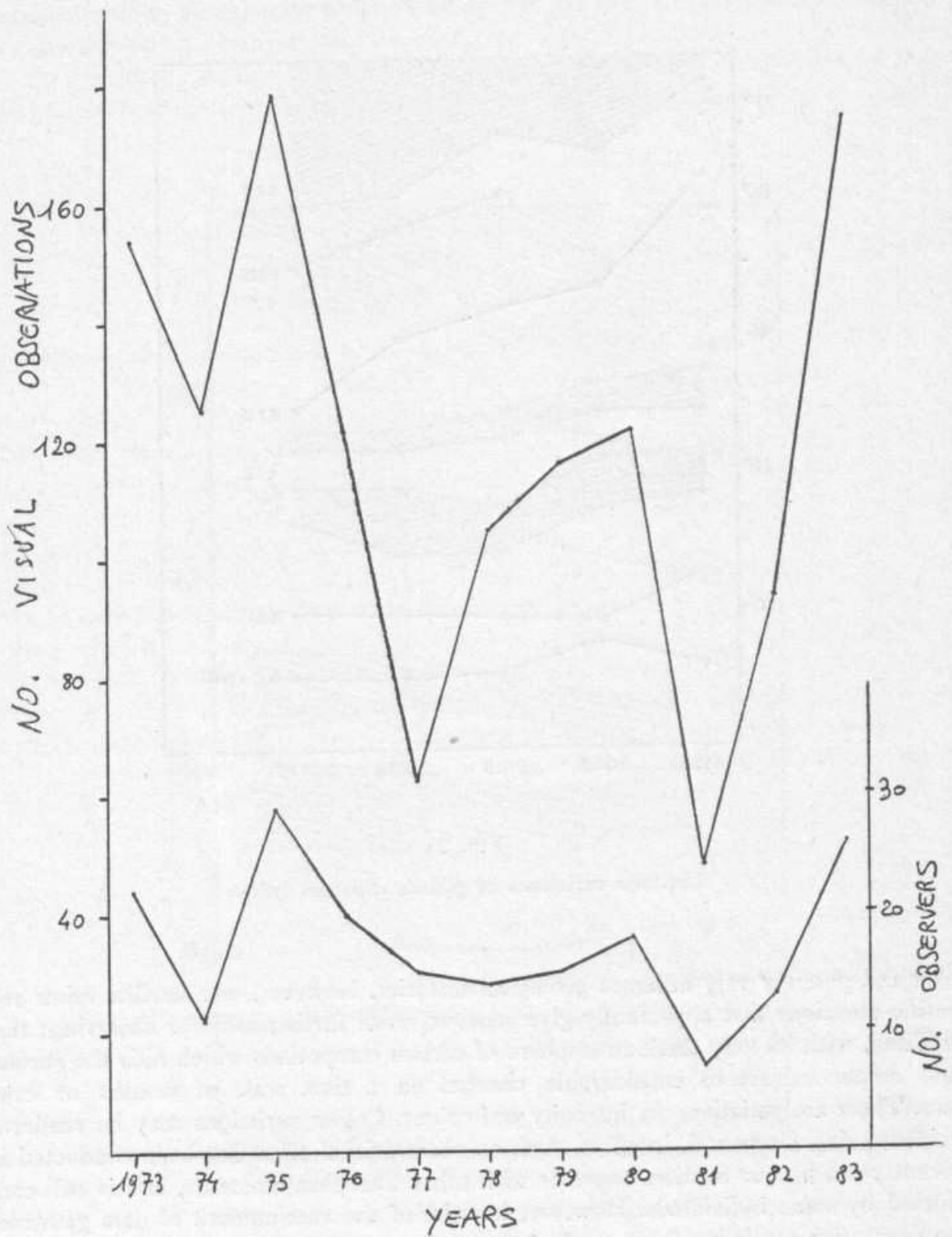


FIG. 3