Christ, though it retained the outward appearance of bread. The alliance of Christianity with Aristotelian philosophy that produced scholasticism provided an epistemology that underpinned this view of the Eucharist. In scholasticism it was possible for qualities to exist without a subject. It therefore appeared to Jesuits, and others (though certainly not to all theologians), that atomism represented a denial of this view of the Eucharist, and was in short heretical.

Galileo's most outspoken expression of his atomistic epistemology appeared in *The Assayer* in 1623, a work in which he attacked the Aristotelianism of Orazio Grassi's earlier book *The Astronomical and Philosophical Balance,* while advancing his own view of scientific method. It was hailed as a triumph by his contemporaries, a masterpiece both of style and argument that had effectively demolished his Jesuit adversary. Having lost their battle on the scientific front, Galileo's enemies turned to theology just as they had done a decade earlier in the dispute over Copernicanism. Redondi has discovered in the Vatican files a condemnation of the *Assayer* submitted to the inquisition in 1624. It accused the *Assayer* of contradicting the Eucharistic dogma. The legal process that should have ensued was however mysteriously blocked immediately afterwards by the intervention of a powerful prelate. But again, as with other aspects of the affair, no explanation of this event is available. On the other hand, Redondi has gathered considerable evidence to suggest the condemnation could have been a time bomb quietly ticking in the background awaiting its subsequent explosion in 1632.

Was this then the real issue at stake in Galileo's trial? Redondi has uncovered much fascinating circumstantial evidence suggesting that it could have been — but nothing to show that it was ultimately the issue that brought Galileo to trial. There is nevertheless a vast amount of evidence indicating that it was Copernicanism that caused his downfall. The proposal that after all the trial bore *no* relation to the legal case as presented, and in reality concerned an entirely different and distinct heresy, does of course carry the conspiracy theory literally to incredible lengths.

There is, over and above this, one apparently insurmountable difficulty for Redondi's thesis, even if we were inclined to ascribe it a prominent rather than predominant role in the events of 1633. If we were to assume that Eucharistic dogma was at the heart of the trial and had resulted in the anathematizing of Galilean atomic theory — albeit secretly — how are we to explain Galileo's most important explication and application of the theory in his *Discourse on the Two New Sciences* that was published five years later? The penalty for a relapsed heretic was death, as everyone knew. Galileo had been extremely frightened in 1633 — he would have been terrified of a further confrontation. □

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Universal appeal

David W. Hughes

Exploring the Southern Sky: A Pictorial Atlas from the European Southern Observatory (ESO). By S. Laustsen, C. Madsen and R.M. West. *Springer-Verlag: 1987. Pp. 274. DM98 (DM128 in 1988), £36.**

NEARLY half of the world's 6,000 professional astronomers work in Europe, and so can view only the northern sky. To redress the balance, in October 1962 Belgium, France, the Netherlands, Sweden and West Germany combined together to build and run the European Southern Observatory (Denmark joined in 1967 and Italy and Switzerland in 1982).

The site they chose was a 2,400-m-high mountain ridge, officially known as Cerro Chincado, but colloquially called La Silla (The Saddle). The observatory is some 600 km north of Santiago in Chile. To the east is the massive Andes mountain range, to the north the Atacama desert. Seventy kilometres to the west is the Pacific Ocean with its cold Humboldt Current. The average rainfall is 5 cm per year. During the night the temperature changes by less than 3 °C. The sky is clear for more than six consecutive hours on more than 70 per cent of all nights. It is one of the finest astronomical observing sites on Earth.

Many observatories have been in existence for over 25 years, but few have celebrated this anniversary in such a splendid way as the ESO. Laustsen, Madsen and West have collected together 90 colour plates and 147 black-and-white prints, all taken at the observatory during the past ten years, and have produced a superb picture-book of southern celestial objects and star fields. It is the best such book I have seen. Authors, publishers and printer have excelled themselves.

Of course, the usual favourites are here — the Magellanic Clouds, galaxies such as the Sombrero, the Sculptor Group, NGC 253, NGC 2997, open clusters like NGC 6193 in Ara, the Orion Nebula, the Vela supernova remnant, the Coal Sack, Eta Carinae, globular cluster M55 and Omega Centauri. Nearby objects are not forgotten. There is a section on comets and asteroids plus a chapter on the observatory itself, with aerial photographs of the complex and closeups of the telescopes. There are also rarer sights, such as minor-planet trails near the ecliptic, the asteroid La Silla, SN 1987 A, and an amazing objective prism Schmidt image of the star field near M17.

Each picture has a detailed caption. Not only is there a discussion of the object but we are also told which filters, detectors and emulsions were used, the exposure time and the image scale of the printed plate. The book is more than a joy to look at, it is a useful tool for both amateur and professional astronomers. As a bonus there are 30 maps adjacent to the plates, so that readers can find their way in amongst the stars and nebulae, and also a 120 cm foldout panorama of the Milky Way. Altogether this is an astronomical *tour de force.* □

*A German edition of the book, published by Birkhäuser, Basel, is available in West Germany, Austria and Switzerland.

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