Willy Hartner, *Oriens-Occidens, ausgewählte Schriften zur Wissenschafts- und Kulturgeschichte, Band II.* Herausgegeben von Y. Maeyama. Geleitwort von Matthias Schramm. Hildesheim, etc. (Georg Olms Verlag) 1984, 423 pp., DM 118 – (*Collectanea* III,2).

Willy Hartner (1905–1981), by his research during half a century, has contributed substantially to setting the standards of scholarship in the history of astronomy before Newton, and of its connection with the Far Eastern, the Islamic, the Latin Western, and the Old Norse cultures, all of which he knew thoroughly mastering the corresponding spectrum of basic languages. Among colleagues Hartner towered in many respects, and in particular in the art of locating the kernel of a technical problem in astronomy and of using it thereafter as a tracer to explore the network of connections between scientific activities across gaps of culture and periods of centuries.

Apart from his book, *Die Goldhörner von Gallehus* (Wiesbaden 1969), Hartner's production appeared as contributions to books and different journals not all easily accessible, so it is nice to have *Oriens-Occidens* (Hildesheim 1968) – with a selection of 24 papers from the period 1934–68 – completed here by a second volume of 32 reprinted articles dating, with three exceptions, from the period 1969–80. The volume is divided thematically into sections under the headings: History and Philosophy of Science in General with contributions on humanism and on Goethe, Far East, Antiquity, Islam, Renaissance, and Antiquity-Islam-Renaissance with ten comparative intercultural studies. Finally the index by Maeyama and the Hartner biography and bibliography by Schramm make the book a useful work of reference.

Kr. Peder Moesgaard

J. Mogenet (†) and A. Tihon (with the assistance of R. Royez and A. Berg), *Nicéphore Grégoras. Calcul de l'éclipse de Soleil du 16 juillet 1330,* Amsterdam (J. C. Gieben) 1983, 222 pp., Hfl./DM 70. (*Corpus des Astronomes byzantins* 1).

An index of the intellectual climate of fourteenth-century Byzantium is that the acrimonious rivalry between two of its men of learning should have spent itself on, among other things, competing predictions of eclipses. The editors of the book under review, having already produced the eclipse calculations of Barlaam of Seminara (Louvain, 1977), here give us the one surviving computation by his adversary Nicephorus Gregoras, for the solar eclipse of July 16, 1330.

Gregoras begins with the pre-computed data for the conjunction on that day. In the first part of the short text he uses the procedures and tables of Ptolemy's *Almagest* to derive the times of the eclipse's phases, its magnitude, and the horizon phenomena called '*prosneuseis*'. He then calculates the same phenomena according to the somewhat different methods of the *Handy Tables.* In all this prolix series of calculations Gregoras exhibits a thorough (though not infallible) mastery of the most exacting aspect of the practical side of Ptolemy's treatises. Regrettably, he makes no comment on the agreement between his results and observations; for of course over an interval of more than a millenium Ptolemy's tables had drifted away from accuracy. But it may be significant that in his correspondence Gregoras, who before had expressed only respect for Ptolemy's tables, by 1333 was writing of the need for a program of revision. In this he seems however to have advanced no farther than a correction of the length of the tropical year.

The present edition, the first, spares nothing to make Gregoras's work accessible. The Greek text is faithful to the unique manuscript, which was prepared under Gregoras's

supervision. An accurate French translation faces the text, followed by a detailed astronomical commentary. The introduction lucidly sets out the historical setting and significance of the work. As a whole the editors have given in this book a model of competence, thoroughness, and accuracy in the handling of a quite technical text. Although this first volume of the *Corpus des Astronomes byzantins* has only modest historical importance, it promises well for the grander things to come.

Alexander Jones

Gregorian Reform of the Calendar. Proceedings of the Vatican Conference to Commemorate Its 400th Anniversary, 1582–1982 (eds. G. V. Coyne, S. J., M. A. Hoskin, and O. Pedersen), Città del Vaticano (Specola Vaticana) 1983, 321 pp.

This book is published as a commemoration of the 400th anniversary of the Gregorian reform of the calendar, but it is much more than that. It is a rather detailed study of what the calendar is and has been, its historical and scientific prerequisites and its role in society.

The book contains fourteen major articles and it is divided into seven sections. In the first section K. P. Moesgaard deals with the basic astronomical ideas within chronology and chronometry. The second section is about the historian antecedents of the reform. It includes a study of the ecclesiastical calendar from the post-Apostolic age to the Middle Ages by O. Pedersen and an article by John North about the four centuries antecedent to the reform. In the third section J. Dobrzycki and E. Proverbio discuss some astronomical aspects of the reform. Section 4 contains three articles in which U. Baldini, G. Moyer and J. Casanovas present some principal personages of the reform. Section 5 is an article by A. Ziggelaar which forms the key chapter of the book. In this paper Ziggelaar studies the apostolic letter *Inter gravissimas,* dated 24 February, 1582, answering the following questions: "What authority had this letter? Who had constructed the new calendar? How was it promulgated and published? How should we evaluate it in a religious and ecumenical perspective?". In section 6 H. M. Nobis, M. A. Hoskin, O. Gingerich and K. Fischer present studies on the reception of the reform in different countries and by different groups. In the final section F. Russo outlines the contemporary discussions on the reform of the calendar with special emphasis on the proposal for a Universal Calendar, which divides the year into 12 months each with 30 or 31 days and which introduces "extra days".

The book includes a useful glossary of technical terms. It certainly will be of great value for anyone who wants to study the history of the philosophical and scientific foundation of our calendar.

Peter Øhrstrøm

Jacques Merleau-Ponty, *La science de l'univers à l'âge du positivisme. Etude sur les origines de la cosmologie contemporaine,* Paris (Vrin) 1983. 368 p., broché, 270 FF.

La cosmologie, qui embrasse le passé, le présent et l'avenir de l'univers, restera un domaine conjectural tant qu'on ne disposera que de la description du ciel étoilé et de la description mathématique des mouvements dans le système solaire: les conceptions n'ont guère d'autre base que l'intuition, et leur apport scientifique demeure négligeable. Il en ira autrement lorsque des éléments nouveaux commenceront à être recueillis, c'est-à-dire à partir de la fin du 18ème siècle, et c'est de là que part l'étude magistrale que nous livre J. Merleau-Ponty.

Ce premier siècle de la cosmologie positive débute avec deux oeuvres d'une valeur exceptionnelle, isolées dans le temps et de nature bien différente: *l'Exposition du système du Monde* de Laplace, et l'exploration téle-