

## RECENT PUBLICATIONS RELATING TO THE HISTORY OF ASTRONOMY

### *Books and Pamphlets*

And there shall be signs ... Alexandria, N.S.W., Millennium Books, 1995. [80] p. col. illus. (Treasures of the Vatican Library. Book illustration, v. 8)

Miniatures relating to the heavens—sun, moon, planets, and zodiacal and other constellations—are paired with quotations from the Old and New Testaments and the Apocrypha. The manuscript sources of the illustrations are briefly indicated on the last page.

Gli Archivi per la storia della scienza e della tecnica. Atti del convegno internazionale, Desenzano del Garda, 4–8 giugno 1991. Roma, Ministero per i beni culturali e ambientali, Ufficio centrale per i beni archivistici, 1995. 2 v. (1337 p.) illus. (part col.) (Pubblicazioni degli Archivi di stato. Saggi, 36)

Also published as Scritti e documenti, v. 17, of the Accademia nazionale delle scienze detta dei XL.

Partial contents: Dragoni, G. Fisici e astronomi alla ricerca delle proprie origini.—Proverbio, E. Gli archivi storico-scientifici esistenti negli osservatori astronomici italiani.—Tagliaferri, G. Il riordinamento e l'utilizzazione dell'Archivio storico dell'Osservatorio astronomico di Brera.—Bonfiglio Dosio, G. L'archivio dell'Osservatorio astronomico di Padova.

A Astronomia no Brasil: depoimentos. Editado por: Beatriz Barbuy, João Braga, Nelson Leister. São Paulo, Sociedade Astronômica Brasileira, 1994. 153 p. illus., group ports.

Contents: Prefácio.—Ata da criação da SAB.—Diretorias eleitas.—Delhaye, J. L'astronomie brésilienne.—Pacheco, J. A. de F. Reminiscências pessoais da época da criação da SAB.—Ferraz-Mello, S. Nos primeiros tempos da nossa astronomia.—Soares, P. B. Início de carreira: 1963–1973.—Kaufmann, P. Realizações experimentais em rádio-astronomia (1959–1994).—Vieira, E. da R. A astronomia na UFRGS.—Silva, L. da. O início da astrofísica no Observatório Nacional: um depoimento estritamente pessoal.—Campos, J. A. Observatório do Valongo: mais de um século a serviço do ensino da astronomia.—Santos, P. M. dos. Uma avaliação histórica do Instituto Astronômico e Geofísico da Universidade de São Paulo—IAG-USP.—Barreto, L. M. O Observatório Nacional do Brasil.

Astronomical observatories and institutes in Italy. [Proceedings of the] 7th annual meeting on the history of astronomy, Milano, 21–22 April 1995. Edited by Edoardo Proverbio. Cremona, Monotipia cremonese, 1996. 747–935 p. illus., facsimis., ports. (Società astronomica italiana. Memorie, v. 66, n. 4, 1995)

Contents: Proverbio, E., and P. Calledda. Cannocchiali e telescopi di interesse storico e loro costruttori in uso negli osservatori astronomici italiani.—Calabrese, V. An early Italian astronomical society founded in Turin in 1906.—Böhm, C. L'osservatorio astronomico di Trieste nel XIX secolo.—Cristaldi, S., and A. Mangano. The Astrophysical Observatory and the University Institute of Astronomy in Catania.—Olostro Cirella, E. Per una storia dell'Osservatorio astronomico di Capodimonte: gli anni dal 1735 al 1812.—Cassini, A. Gio. Domenico Cassini: uno scienziato del Seicento a Bologna.—Tinazzi, M. Pietro Cossali and the Parma Observatory between the end of the 18th century and the beginning of the 19th century. Mathematical contributions to the dynamics in the solar system.—Bonoli, F., and G. Parmeggiani. Quirico Filopanti: una singolare figura di astronomo nella Bologna dell'Ottocento.—Bonoli, F., C. Colavita, and C. Mataix. L'ambiente culturale bolognese del Quattrocento attraverso Domenico Maria Novara e la sua influenza in Nicolò Copernico.—Mataix Loma, C. Copernico: entre el racionalismo y el hermetismo.—Todesco, P. La famiglia Lusverg dal '600 all'800.—Belli, S. L'astronomia per la geografia: il caso Marsili.—Romano, G. The picture of the Sala Meridiana of the Padua Observatory.—Arrighi, G. L'epistolario di P. Angelo Secchi S.J. (con una lettera all'Ab. Moigno).—Marini, M. A project to rearrange and inventory the historical-scientific archive of the Turin-Pino Torinese Astronomical Observatory.

Astronomy before the telescope. Edited by Christopher Walker. With a foreword by Patrick Moore. London, Published for the Trustees of the British Museum by British Museum Press, 1996. 352 p., [16] p. of col. plates. illus. (part col.), facsimis. (part col.), maps.

Contents: Moore, P. Foreword.—Ruggles, C. L. N. Archaeoastronomy in Europe.—Wells, R. A. Astronomy in Egypt.—Britton, J. P., and C. B. F. Walker. Astronomy and astrology in Mesopotamia.—Toomer, G. J. Ptolemy and his Greek predecessors.—Potter, T. W. Astronomy in Etruria and Rome.—Jones, A. Later Greek and Byzantine astronomy.—Field, J. V. European astronomy in the first millennium: the archaeological record.—Pingree, D. Astronomy in India.—King, D. A. Islamic astronomy.—Pedersen, O. European astronomy in the Middle Ages.—Swerdlow, N. M. Astronomy in the Renaissance.—Turner, G. L'E. Late medieval and Renaissance instruments.—Ronan, C. A. Astronomy in China, Korea and Japan.—Aveni, A. F. Astronomy in the Americas.—Warner, B. Traditional astronomical knowledge in Africa.—Orchiston, W. Australian aboriginal, Polynesian and Maori astronomy.—Stephenson, F. R. Modern uses of ancient astronomy.

Astronomy in New Mexico: past, present and future. Esteban A. Herrera, Kurt S. J. Anderson, editors. Albuquerque, N.M., New Mexico Academy of Science, 1995. 192 p. illus., port. (New Mexico journal of science, v. 35, Nov. 1995)

Contents: Walker, C. L. Introduction.—Anderson, K. S. J. To the edge of the universe: the Apache Point Observatory.—Finley, D. C. Radio astronomy in New Mexico: the VLA and VLBA.—Kron, R. G. The Sloan Digital Sky Survey: mapping the universe from New Mexico.—Mulrooney, M. The Cloudcroft Observatory and NASA's 3.0 m liquid mirror telescope.—Penn, M. J. The National Solar Observatory at Sacramento Peak.—Gisler, G. Astrophysics at the Los Alamos National Laboratory.—Westpfal, D. Astronomy at the New Mexico Institute of Mining and Technology.—Beebe, R. F., and N. J. Chanover. Atmospheres of the giant planets.—Devereux, N. A. The New Mexico Extragalactic H $\alpha$  Imaging Survey.—Klypin, A. A., J. O. Burns, E. Ellingson, M. J. Ledlow, and C. Loken. Clusters of galaxies.—Penn, M. J. Mapping coronal magnetic fields: new prospects.—Amaral, B. Planetariums in New Mexico: facing the challenge of 21st century astronomy education.—Anderson, K. S. J. The Sunspot Science Education Center.—French, M. G. Astronomy education at NMSU: an innovative approach.—McGraw, J. T., and A. O'Catherine. LodeStar: New Mexico's window on the universe.—Zelik, M. Pueblo astronomy.—Anderson, K. S. J. Facilities for astronomical research and education in New Mexico.—Glossary.

Baiada, Enrica, Fabrizio Bònoli, and Alessandro Braccesi. Museo della Specola. Catalogo italiano-inglese. Bologna, Università degli studi di Bologna, Centro interdipartimentale per i servizi museografici ed archivistici (CISMA), Dipartimento di astronomia, 1995. 204 p. illus. (part col.), facsimis. (part col., 1 fold.)

Contents: Roversi-Monaco, F. Presentazione. Foreword.—Turner, G. L'E. Prefazione. Preface.—pt. 1. L'astronomia a Bologna. Astronomy in Bologna.—pt. 2. Il catalogo del museo. The catalogue of the museum.—pt. 3. Apparati. Apparatuses.

Bakhouche, Béatrice. Les textes latins d'astronomie. Un maillon dans la chaîne du savoir. Louvain, Éditions Peeters, 1996. xv, 347 p. illus., facsimis. (Bibliothèque d'études classiques)

Contents: Avant-propos.—ch. 1. Y avait-il des astronomes à Rome?—1. ptie. Les textes d'astronomie, un genre littéraire. ch. 2. Les traités de cosmographie. ch. 3. Un genre littéraire: cas particuliers. ch. 4. Étude des préfaces: cas général.—2. ptie. Les textes d'astronomie, contenu scientifique. ch. 5. Le problème des sources. ch. 6. Les préalables: le dit et le non-dit. ch. 7. Les cercles célestes, les constellations et la sphère. ch. 8. Les planètes: généralités. ch. 9. Les luminaires. ch. 10. Les mouvements planétaires. ch. 11. Essai de filiation.—En guise de conclusion. De nouveaux maillons dans la chaîne du savoir.

Bergia, Silvio. Dal cosmo immutabile all'universo in evoluzione. Torino, Bollati Boringhieri, 1995. 310 p. (Saggi scientifici) (Serie di storia della scienza)

Bicentenaire de la naissance d'Adolphe Quetelet (1796–1874), fondateur de l'Observatoire de Bruxelles.

Tweehonderdste verjaardag van de geboorte van Adolphe Quetelet (1796–1874), stichter van de Sterrenwacht van Brussel. Édité par P. Alexandre et J. Denoyelle. Uitgegeven door P. Alexandre en J. Denoyelle. Bruxelles, Observatoire royale de Belgique, 1996. 113 p. illus., facsimis., maps, ports. (Brussels. Observatoire royal de Belgique. Bulletin astronomique, v. 11, no 1, 1996)

French and Flemish in parallel columns. French titles only are cited below.

Contents: Avant-propos.—Pâquet, P. Bicentenaire de la naissance d'Adolphe Quetelet, fondateur de l'Observatoire de Bruxelles.—Elkhadem, H., and L. Wellens-de Donder. Adolphe Quetelet 1796–1874.—Vanpaemel, G. Quetelet et la statistique.—Demarée, G. R. Adolphe Quetelet (1796–1874): précurseur du réseau belge d'observations climatologiques.—Boxmeer, H. van. Quetelet et l'établissement des mériadiennes.—Sauval, J. Adolphe Quetelet et les étoiles filantes.—Alexandre, P. La contribution d'Adolphe Quetelet à l'histoire des phénomènes naturels.—Wellens-de Donder, L. Les premiers voyages scientifiques de Quetelet et la fondation de l'Observatoire royal de Bruxelles.—Dale, P. H. Quetelet et la bibliothèque de l'Observatoire.—Boxmeer, H. van. Le rapport d'Adolphe Quetelet sur la formation d'un observatoire dans les provinces méridionales du Royaume des Pays-bas.

A portrait of Quetelet appears on the outside front cover of the issue.

Bjorn Jónsson. Stjarnvísi í Eddum. Reykjavík, Bókaútgáfan Skjaldborg, 1989. 141 p. illus. (1 fold, in pocket)

According to Haraldur Bessason's foreword (in English), the author argues "that, originally, the 13th century Snorra Edda was in part intended as a textbook on astronomy."

Boscovich, Ruggero G. Lettere ad Anton Mario Lorgna, 1765–1785. A cura di Ugo Baldini e Pietro Nastasi.

Roma, 1988. 142 p. illus., facsimis. (Accademia nazionale delle scienze detta dei XL. Scritti e documenti, 7. Documenti boscovichiani, 1)

Preface also in English.

Of the 29 letters included, 28 are held by the Biblioteca civica di Verona and one, by the library of the University of California at Berkeley.

Chailley, Jacques, and Jacques Viret. Le symbolisme de la gamme. Paris, 1988. 150 p. illus., music. (La Revue musicale, no 408/409)

Contents: 1. ptie. L'hymne UT QUEANT LAXIS et ses cryptogrammes.—2. ptie. Compléments symboliques.—3. ptie. Quelques problèmes annexes.

Among the topics explored is the relationship between the notes of the scale and the seven planets of antiquity.

Chapman, Allan. Astronomical instruments and their users: Tycho Brahe to William Lassell. Aldershot, Hants, Brookfield, Vt., Variorum, 1996. [310], 10 p. illus., facsimis., ports. (Collected studies series, CS530)

Contents: 1. A study of the accuracy of scale graduations on a group of European astrolabes (1983).—2. The accuracy of angular measuring instruments used in astronomy between 1500 and 1850 (1983).—3. Tycho Brahe—instrument designer, observer and mechanician (1989).—4. Tycho Brahe in China: the Jesuit mission to Peking and the iconography of European instrument-making processes (1984).—5. Jeremiah Horrocks, the transit of Venus, and the 'new astronomy' in early seventeenth-century England (1990).—6. Jeremy Shakerley (1626–1655?): astronomy, astrology and patronage in civil war Lancashire (1986).—7. The design and accuracy of some observatory instruments of the seventeenth century (1983).—8. Astronomia practica: the principal instruments and their uses at the Royal Observatory (1976).—9. Reconstructing the angle-measuring instruments of Pierre Gassendi (1994).—10. George Graham and the concept of standard accuracies in instrumentation (1990).—11. Scientific instruments and industrial innovation: the achievement of Jesse Ramsden (1993).—12. William Herschel and the measurement of space (1989).—13. An occupation for an independent gentleman: astronomy in the life of John Herschel (1993, corrected 1994).—14. Private research and public duty: George Biddell Airy and the search for Neptune (1988).—15. The pit and the pendulum: G. B. Airy and the determination of gravity (1993).—16. Sir George Airy (1801–1892) and the concept of international standards in science,

timekeeping and navigation (1985).—17. William Lassell (1799–1880): practitioner, patron and ‘grand amateur’ of Victorian astronomy (1989).

Chapman, Allan. Dividing the circle; the development of critical angular measurement in astronomy, 1500–1850. 2d ed. Chichester, New York, J. Wiley, Published in association with Praxis Pub., Chichester, 1995. 215 p., [40] p. of plates. illus., facsimis., ports. (Wiley-Praxis series in astronomy and astrophysics)

Chinnici, Ileana. An “Italian” observatory in India: the history of the Calcutta Observatory. Palermo, Istituto e osservatorio astronomico “G. S. Vaiana”, 1996. 21 p. illus., ports. (Preprint 7/96)  
To be published in *Studies in History of Medicine and Science* (New Delhi), v. 14.

Chown, Marcus. Afterglow of creation: from the fireball to the discovery of cosmic ripples. Sausalito, Calif., University Science Books, 1996. 222 p., [2] p. of col. plates. illus. (part col.), ports.

Christoph Clavius e l’attività scientifica dei Gesuiti nell’età di Galileo. Atti del Convegno internazionale (Chieti, 28–30 aprile 1993). A cura di Ugo Baldini. Roma, Bulzoni editore, 1995. 316 p. illus. (Università degli studi “G. d’Annunzio” di Chieti. Collana dell’Istituto di filosofia, nuova ser., 7)

Partial contents: pt. 1. Aspetti della attività scientifica di Clavius e della sua scuola. Lucchetta, G. A. Componenti platoniche e aristoteliche nella filosofia della matematica di Clavius. Ziggelaar, A. Jesuit astronomy north of the Alps. Four unpublished Jesuit letters, 1611–1620. Dollo, C. Tanquam nodi in tabula—tanquam pisces in aqua. Le innovazioni della cosmologia nella Rosa Ursina di Christoph Scheiner. Tabaroni, G. L’inserimento dei Gesuiti nell’astronomia moderna.—pt. 2. Aspetti del contesto storico, filosofico e pedagogico. Aricò, D. “In doctrinis glorificate Dominum”. Alcuni aspetti della ricezione di Clavio nella produzione scientifica di Mario Bettini. Enzensberger, H. Società, cultura e religione a Bamberg e in Franconia ai tempi di Christoph Clavius. Gatto, R. L’attività scientifica dei Gesuiti a Napoli.

Currents in astrophysics and cosmology; papers in honor of Maurice M. Shapiro. Edited by G. G. Fazio, R. Silberberg. Cambridge, New York, Cambridge University Press, 1993. 310 p. illus., ports.

Partial contents: Simpson, J. A. Astrophysical discoveries derived from transient cosmic ray and solar flare particle Earth-based investigations: the early years [ca. 1935–58]—Oda, M. How X-ray astronomy has extended the horizon of physics; a personal memoir.—Reines, F. IMB detection of neutrinos from SN1987A: history and results.—Silberberg, R. Contributions of Maurice M. Shapiro and his group to cosmic-ray astrophysics.—Shapiro, M. M. From Jerusalem to heavenly realms: memoir of a cosmic journey.

Díaz Cintora, Salvador. Meses y cielos; reflexiones sobre el origen del calendario de los Nahuas. México, Universidad Nacional Autónoma de México, 1994. 100 p., [8] p. of plates. illus., facsimis.

Draelants, Isabelle. Éclipses, comètes, autres phénomènes célestes et tremblements de terre au Moyen Age. Enquête sur six siècles d’historiographie médiévale dans les limites de la Belgique actuelle (600–1200). Louvain-la-Neuve, Presses universitaires de Louvain, U.C.L., 1995. 160 p. illus. (Louvain. Université catholique. Faculté de philosophie et lettres. Travaux, 38. Section d’histoire, 9)

Contents: Chapitre liminaire.—ptie. 1. Les données et leur critique.—ptie. 2. Présupposés astronomiques.—ptie. 3. Ce que disent les textes et comment ils le disent.—ptie. 4. Réertoires critiques.—En guise de conclusion: objectivité ou déterminisme historique? Les concordances terre-ciel.

Fernández Valbuena, José A. Mirroring the sky: a postclassic K’iche-Maya cosmology. Drawings by Jorge L. Sánchez and Melinda A. Goetz. Lancaster, Calif., Labyrinthos, 1996. 97 p. illus., plans.

Führer durch die öffentliche Ausstellung “Astronomie in Frankfurt seit 170 Jahren und in Zukunft,” anlässlich der 1200-Jahr-Feier der Stadt Frankfurt am Main. [Frankfurt am Main, Physikalischer Verein, 1994?] [32] p. illus., plan.

Catalog of an exhibition held at the Physikalischer Verein in Frankfurt am Main, Oct. 28–30, 1994.

Gabriel, Kathryn. Roads to Center Place; a cultural atlas of Chaco Canyon and the Anasazi. Boulder, Johnson Books, 1991. 300 p. illus., maps, plans.

Gaposchkin, Cecilia Helena Payne. Cecilia Payne-Gaposchkin, an autobiography and other recollections. Edited by Katherine Haramundanis. 2d ed. Cambridge, New York, Cambridge University Press, 1996. xxii, 277 p. ports.

“Bibliography of works by Cecilia Payne-Gaposchkin”: p. 239–255.

Contents: Trimble, V. Cecilia Payne-Gaposchkin: an introduction.—Greenstein, J. L. An introduction to ‘The dyer’s hand.’—Kidwell, P. A. An historical introduction to ‘The dyer’s hand.’—Gaposchkin, C. H. P. The dyer’s hand, an autobiography.

Gil i Bononcia, Miquel. Els rellotges de sol. Girona, Diputació de Girona, Caixa de Girona, 1991. 96 p. illus., maps. (Quaderns de la Revista de Girona, no. 33) (Guies, no. 15)

Giornata copernicana, Padua, 1993. Copernico a Padova. Atti della Giornata copernicana nel 450° della pubblicazione del *De revolutionibus orbium coelestium*, Padova, 10 dicembre 1993. Padova, CLUEP, 1995. 225 p., [8] p. of col. plates. illus. (part col.)

Contents: Muraro, G. Presentazione.—Bertola, F. [Intervento d’apertura]—Benzoni, G. Cultura umanistica e cultura universitaria a Padova e Venezia tra fine ’400 e primo ’500. Qualche appunto e qualche spunto.—Poppi, A. L’aristotelismo negli anni del soggiorno padovano di Niccolò Copernico.—Biliński, B. Intorno ai problemi del Copernico padovano.—Avezzù, G. Le fonti greche di Copernico.—Maccagni, C. L’astronomia a Padova e Nicolò Copernico [summary only]—Premuda, L. Nicola Copernico studente di medicina a Padova e medico.—Bellone, E. Il ruolo dei manufatti ottici nel trionfo del copernicanesimo.—Rosino, L. Copernico, Keplero e Galileo nel 450° anniversario del “*De revolutionibus*.”—Tosetti Grandi, P., and G. Galiazzo. Il ciclo pittorico degli *Uomini Illustri* nella biblioteca di San Giovanni di Verdara in Padova: un contributo agli itinerari copernicani.

Granada, Miguel A. El debate cosmológico en 1588: Bruno, Brahe, Rothmann, Ursus, Röslin. Napoli, Bibliopolis, 1996. 165 p. facsimis. (Istituto italiano per gli studi filosofici. Lezioni della scuola di studi superiori in Napoli, 18)

Contents: Prólogo.—1. Giordano Bruno: *Camoeracensis Acrotismus*, Wittenberg 1588.—2. Tycho Brahe: *De mundi aetheri recentioribus phaenomenis*, Uraniborg 1588.—3. La correspondencia Brahe-Rothmann en torno a la cosmología de Copérnico (1588–1590).—4. Nicolaus Raymarus Ursus: *Fundamentum astronomicum*, Estrasburgo 1588.—5. Helisaeus Röslin: *De opere Dei creationis; seu, De mundo hypotheses*, Frankfurt 1597.—Epílogo.

Grundy, Alan H. Britain’s prehistoric achievements. Lewes, Sussex, Book Guild, 1994. 190 p. illus., maps, plans.

Investigates alignments at many sites, relating to rising and setting points of the sun, moon, and bright stars.

Hearnshaw, John B. The measurement of starlight; two centuries of astronomical photometry. Cambridge, New York, Cambridge University Press, 1996. xiv, 511 p. illus., facsimis., ports.

“This book tells the story of the historical development of stellar photometry, the science of the measurement of the magnitudes and colours of the stars.”

History of astronomy, an encyclopedia. Edited by John Lankford. New York, Garland Pub., 1997. xix, 594 p. illus., facsimis., plans, ports. (Garland encyclopedias in the history of science, v. 1) (Garland reference library of social science, v. 771)

Hooda, D. S., and Jagat N. Kapur. Āryabhata, life and contributions. New Delhi, New Age International Publishers, 1996. 130 p. illus.

Contents: 1. History of ancient Indian astronomy and mathematics.—2. Life history of Āryabhata.—3. The Āryabhatiya.—4. Contributions of Āryabhata in mathematics.—5. Contributions of Āryabhata in astronomy.—6. Relevance of Āryabhata to modern mathematics and science.

Hordozható napórák, válogatás magyarországi gyűteményekból. Az *Idő-Merő* (Iparművészeti Múzeum, 1995. aug. 4.-szept. 24.) és a *Mértékem az égbolt* (BTM Kiscelli Múzeum, 1995. szept. 12.-nov. 12.) c. kiállítások katalógusa. Szerkesztette, Bartha Lajos. Portable sundials, selected from Hungarian collections. Catalogue of exhibitions *Time-Measure* (Museum of Applied Arts, Aug. 4-Sep. 24, 1995) and *My Measure is the Sky* (Budapest History Museum-Kiscelli Museum, Sep. 12-Nov. 12, 1995). Edited by Lajos Bartha. Budapest, Iparművészeti Múzeum, Magyar Csillagászati Egyesület, Országos Műszaki Múzeum, 1995. 68 p. illus.

Color illustrations appear on both sides of front and back covers.

Text in Hungarian with some English, and table of contents in English.

International Colloquium on Absolute Chronology, 2d, *Schloss Haindorf, Austria, 1990*. High, middle or low?

Akten des zweiten Internationalen Kolloquiums über absolute Chronologie. Wien, Verlag der Österreichischen Akademie der Wissenschaften, 1992. 159 p. illus. (1 fold.) (Ägypten und Levante, Zeitschrift für ägyptische Archäologie und deren Nachbargebiete, 3)

Partial contents: Beckerath, J. von. Das Kalendarium des Papyrus Ebers und die Chronologie des ägyptischen Neuen Reiches. Gegenwärtiger Stand der Frage.—Krauss, R. Das Kalendarium des Papyrus Ebers und seine chronologische Verwertbarkeit. Exkurs 1. Regierungslängen von Thutmos I. und II. Exkurs 2. Das Sothis-Datum aus Elephantine. Exkurs 3. Lässt sich die astronomische Decke im Senenmut-Grab für die absolute Thutmosiden-Chronologie auswerten?—Leitz, C. Bemerkungen zur astronomischen Chronologie.—Mucke, H. Zur astronomischen Datierung im zweiten Jahrtausend v. Chr.

International Conference on the History of Science in East Asia, 7th, *Kyoto, 1995*. East Asian science: tradition and beyond. Papers from the seventh International Conference on the History of Science in East Asia, Kyoto, 2–7 August 1993. Edited by Hashimoto Keizō, Catherine Jami, and Lowell Skar. Osaka, Kansai University Press, 1995. 568 p. illus., map, plans, group port.

Errata slip laid in.

Partial contents: Sun, K., and J. Kistemaker. The ecliptic in Han times and in Ptolemaic astronomy.—Yano, M. A planetary ephemeris in Japanese Buddhist astrology: a case of transmission.—Sagô, T. Jōmon stone circles in northern Japan.—Maeyama, Y. The stellar reference-points in ancient China and the evolution of positional astronomy.—Narike, T. The Taichu calendar reform and the *Santong* calendar.—Hu, T. The “quickly completed” (*licheng*) astronomical tables in Chinese calendars after the eighth century.—Unno, K. A surveying instrument designed by Hōjō Ujinaga (1609–1670).—Chen, M. The theory of cosmic expansion in ancient China.—Cullen, C. The *Zhoubi* revisited.—Konings, P. Records of extraordinary phenomena in the *Zuozhuan*.—Fung, K. W. From the Han Mawangdui tomb to the Song imperial collection: a comparative study of two astronomical and meterological [sic] manuscripts.—Satô, M. The idea of chronology in East Asia.—Diény, C. Knowledge and appreciation of Chinese astronomy and history in eighteenth century Europe according to the writings of Antoine Gaubil S.J. (1689–1759).—Hashimoto, K. Earlier evidence of the transmission of the discoveries of Uranus and asteroids to China.

Janković, Nenad Đ. Astronomija u srpskim štampanim kalendarima do 1900. Urednik, Vladimir Pantić. Astronomy in Serbian printed calendars up to 1900. Editor-in-chief, Vladimir Pantić. Beograd, Srpska akademija nauka i umetnosti, 1994. 179 p., [20] p. of facsimils. (Srpska akademija nauka i umetnosti. Posebna izdanja, knj. 628. Odeljenje prirodno-matematičkih nauka, knj. 70)

English summary: p. 175–176.

Les Jésuites à la Renaissance: système éducatif et production du savoir. Sous la direction de Luce Giard. Paris, Presses universitaires de France, 1995. lxxix, 336 p. illus., facsims. (Bibliothèque d'histoire des sciences)

Partial contents: III. Entre ciel et terre, l'intelligibilité de la nature. 7. Randles, W. G. L. Le ciel chez les jésuites espagnols et portugais (1590–1651). 8. Lerner, M. P. L'entrée de Tycho Brahe chez les jésuites ou le chant du cygne de Clavius. 9. Brockliss, L. W. B. Pierre Gautruche et l'enseignement de la philosophie de la nature dans les collèges jésuites français vers 1650.—IV. L'architecture mathématique bâtie par Clavius. 11. Harris, S. J. Les chaires de mathématiques. 12. Knobloch, E. L'œuvre de Clavius et ses sources scientifiques. 13. Kessler, E. Clavius entre Proclus et Descartes. 14. Martzloff, J. C. Clavius traduit en chinois.

The papers by Brockliss, Harris, and Kessler were translated from English by Luce Giard.

Klimka, Libertas. *Tikslieji mokslai Lietuvoje; istorinė apžvalga*. [The exact sciences in Lithuania; a historical survey] Kaunas, "Šviesa," 1994. 188 p. illus., facsims., ports.

Much of the book is devoted to the history of astronomy.

Kragh, Helge. Cosmology and controversy: the historical development of two theories of the universe. Princeton, N.J., Princeton University Press, 1996. 500 p. illus.

"The plan of the book is built around two grand and persistent themes in post-1920 cosmology, namely, the stationary and the evolutionary universe; or rather, a universe of infinite age and a universe with a beginning in time."

Krupp, Edwin C. Skywatchers, shamans & kings: astronomy and the archaeology of power. New York, J. Wiley, 1997. 364 p. illus., maps. (Wiley popular science)

Longitude Symposium, *Harvard University, 1993. The quest for longitude. The proceedings of the Longitude Symposium, Harvard University, Cambridge, Massachusetts, November 4–6, 1993*. Edited by William J. H. Andrewes. Cambridge, Mass., Published by the Collection of Historical Scientific Instruments, Harvard University, 1996. 437 p. illus. (part col.), facsims. (part col.), geneal. table, maps (part col.), ports. (part col.)

Contents: Andrewes, W. J. H. Introduction.—Knowles, J. R. Opening address at the Longitude Symposium.—Cooke, A. La Salle: when ignorance was death.—Landes, D. S. Finding the point at sea.—Longitude in context. Chandler, B. Mathematics. Mörzer Bruyns, W. F. J. Navigation. Thrower, N. J. W. Cartography. Mahoney, M. S. The history of science.—Early attempts to find longitude. Stimson, A. The longitude problem: the navigator's story. Van Helden, A. Longitude and the satellites of Jupiter. Leopold, J. H. The longitude timekeepers of Christiaan Huygens. Turner, A. J. In the wake of the Act, but mainly before. Gingerich, O. Cranks and opportunists: "nutty" solutions to the longitude problem. Howse, D. The lunar-distance method of measuring longitude.—John Harrison. King, A. L. 'John Harrison, clockmaker at Barrow; near Barton upon Humber; Lincolnshire': the wooden clocks, 1713–1730. Andrewes, W. J. H. Even Newton could be wrong: the story of Harrison's first three sea clocks. Randall, A. G. The timekeeper that won the longitude prize. Burgess, M. The scandalous neglect of Harrison's regulator science.—Perfecting the marine timekeeper. Cardinal, C. Ferdinand Berthoud and Pierre Le Roy: judgement in the twentieth century of a quarrel dating from the eighteenth century. Penney, D. M. Thomas Mudge and the longitude: a reason to excel. Betts, J. Arnold and Earnshaw: the practicable solution.—James Arthur Lecture. Cheney, R. C. James Arthur: pioneer collector and benefactor. Daniels, G. Watchmaking in the twenty-first century: the renaissance of the mechanic.—Appendices. Appendix A. Acknowledgements. Appendix B. The Longitude Symposium. 1. Background to the conference. 2. Conference information. 3. Special exhibitions. Appendix C. Translations of the earliest documents describing the principal methods used to find longitude at sea. Appendix D. Finding local time at sea, and the instruments employed.—Bibliography of published and manuscript sources.—Index.

Maitte, Bernard, and Anne-Marie Marmier. *Cosmos, une histoire des représentations de l'univers*. Ont rédigé cet catalogue: Bernard Maitte et Anne-Marie Marmier, avec la collaboration de Josette

Hecquet et Norredine Mahammed. Lille, ALIAS, Centre de culture scientifique, technique et industrielle dans la Région Nord-Pas de Calais, 1988. 161 p. illus., incl. 36 mounted illus. (part col.)

Makrides, Vasilios N. Die religiöse Kritik am kopernikanischen Weltbild in Griechenland zwischen 1794 und 1821. Aspekte griechisch-orthodoxer Apologetik angesichts naturwissenschaftlicher Fortschritte. Frankfurt am Main, New York, P. Lang, 1995. 664 p. (Tübinger Beiträge zur Religionswissenschaft, Bd. 2)

Mammana, Dennis, and Donald W. McCarthy. Other suns, other worlds? New York, St. Martin's Press, 1996. 227 p., [8] p. of plates. illus. (part col.), port.  
The story of the search for extrasolar planets.

Manilius, Marcus. Astronomica. Libro 1. A cura di Dora Liuzzi. Galatina, Congedo editore, 1995. 275 p. (Università degli studi di Lecce. Dipartimento di filologia classica e medioevale. Testi e studi, 8)  
Latin and Italian on facing pages (p. 60–108), with extensive commentary (p. 111–200).

Mendoza, Ramon G. The acentric labyrinth: Giordano Bruno's prelude to contemporary cosmology. Shaftesbury, Dorset, Rockport, Mass., Element, 1995. xxiv, 292 p.

Mercier, Raymond. An almanac for Trebizond for the year 1336. Louvain-la-Neuve, Academia, 1994. 196 p., [30] p. of plates. illus. (Corpus des astronomes byzantins, 7)  
Two folios from the Greek Ms. 525 of the Bayerische Staatsbibliothek in Munich are reproduced on another plate at the end of the volume.

Observatoire astronomique de Strasbourg. Publications. Série Astronomie et sciences humaines. no 8. Strasbourg [1993?] 162 p. illus., plans.

Contents: Davoust, E. La recherche de la vie dans l'univers: enjeux et perspectives.—Stierlin, H. Le développement de la mécanique antique sous l'impulsion de l'astrologie.—Goy, G. Le dossier de l'étrange.—Lévy, M. L. Plaidoyer pour la lune.—Verdier, P. E. A. Les calendriers Indo-Européens.—Iwaniszewski, S. Observations sur l'iconographie des kudurrus cassites en Mésopotamie.—Morando, B. Problèmes d'astronomie de position pour les recherches à caractère historique.—Parisot, J. P. L'astronomie des Egyptiens.—Lazarides, C. La datation de la vie du Christ.

Observatoire astronomique de Strasbourg. Publications. Série Astronomie et sciences humaines. no 9. Strasbourg, 1993. 168 p. illus., map.

Contents: 15<sup>e</sup> réunion. Suagher, F., and J. P. Parisot. L'arc en ciel: trois approches. Delattre, J. Des modèles mécaniques en astronomie: Théon de Smyrne. Verdier, P. E. A. Peut-on prévoir les éclipses par le calendrier de Coligny? Parisot, J. P. La lune et ses périodes. Afonso, G. Le rapport entre le Yi King et l'astronomie.—14<sup>e</sup> réunion. Le Boeuffle, A. L'astronomie de Marianus [sic] Capella. Lévy, M. L. L'année de 364 jours dans les livres d'Hénoch et des Jubilés. Liotta, R. Le cas Galilée. Lebeuf, A., M. S. Ziolkowski, and R. M. Sadowski. Le calendrier des Slaves et l'observatoire imaginaire de Ludwik Stomma. Ramirez de Arellano, M. E. Quelques aspects de la vision du temps chez les Mexica (Aztèques).

Observatoire astronomique de Strasbourg. Publications. Série Astronomie et sciences humaines. no 10. Strasbourg, 1994. 140 p. illus., facsimis.

Contents: 17<sup>e</sup> réunion. Triomphe, R. Cosmologies et religions. Puel, F. Pedro de Medina: un cosmographe de l'époque des grandes découvertes.—16<sup>e</sup> réunion. Obrist, B. Les vents dans l'"Astronomie de Nemrot." Lajoux, J. D. Le calendrier gaulois. Navet, E. Quelques réflexions sur l'idée d'"Ethnoastronomie" et les "Ethno... quelque chose" à partir de la cosmologie des Indiens Ojibwé (Amérique du Nord).—15<sup>e</sup> réunion. Peterschmitt, E. Pensée lunaire et naissance.

Observatoire astronomique de Strasbourg. Publications. Série Astronomie et sciences humaines. no 11. Strasbourg, 1995. 88 p. illus., map.

Contents: 18<sup>e</sup> réunion. Andrillat, H. L'univers clos de Stephen Hawking. Jegues-Wolkiewiez, C. Le site protohistorique des Merveilles. Bour, P. E. C. S. Peirce: recherches photométriques.—17<sup>e</sup> réunion. Pillorget, R. Quelques écrits à titres astrologiques parus à Paris pendant la Fronde (1648–1653).

Observatoire astronomique de Strasbourg. Publications. Série Astronomie et sciences humaines. no 12. Strasbourg, 1996. 82 p.

Contents: 20<sup>ième</sup> réunion. Triomphe, R. L'instinct cosmique. Jegues-Wolkiewiez, C. Sumer: le pays des deux fleuves.—18<sup>ième</sup> réunion. Barreau, H. Le principe anthropique: l'identité de status épistémologique entre sa forme faible et sa forme forte. Bour, P. E. C. S. Peirce: recherches photométriques. Erratum.

Preacher, Stephen. Anasazi sunrise: the mystery of Sacrifice Rock, Zion Canyon's ancient observatory. El Cajon, Calif., Rugged Individualist, 1992. 92 p. illus., ports.

Rajchl, Rostislav. Astronomie v díle Jana Amose Komenského. Uherský Brod, Městský úřad v Uherském Brodě, 1994. 17, [15] p. facsims.

"Astronomy of John Amos Comenius": p. [27]-[30]

San Millán de la Cogolla (*Monastery*). *Biblioteca. Libros de matemáticas y astronomía en la Biblioteca del Monasterio de Yuso de San Millán de la Cogolla.* [Por] Rafael Cámara Angulo. Logroño, Gobierno de la Rioja, 1992. 134 p. facsims. (Filología, 4)  
Provides detailed descriptions of 79 works.

Scientific Instrument Symposium, 11th, Bologna, 1991. Proceedings of the eleventh International Scientific Instrument Symposium, Bologna University, Italy, 9–14 September 1991. Edited by Giorgio Dragoni, Anita McConnell and Gerard L'E. Turner. Bologna, Grafis edizioni, 1994. 256 p. illus., facsims., maps, ports. (Immagini e documenti)

Partial contents: Hall, A. R. The contributions of science and technology to the design of early optical instruments.—Débarbat, S. V., and S. Grillot. Current research use of a historical instrument: the 'photomètre à oeil-de-chat' designed by André Danjon.—Proverbio, E., and P. Tucci. From reflectors to refractors: the evolution of Giovan Battista Amici, constructor of astronomical instruments.—Basso Ricci, M., and P. Tucci. Gauss's magnetometer at Brera astronomical observatory.

Many of the other papers include some discussion of astronomical instruments.

Sheehan, William. The planet Mars, a history of observation & discovery. Tucson, University of Arizona Press, 1996. 270 p. illus., maps, ports.

Sikorski, Jerzy. Prywatne życie Mikołaja Kopernika. Wyd. 3., przejrz. i uzup. Warszawa, Prószyński S-ka, 1995. 310 p., [16] p. of plates. illus., facsims., ports. (Na ścieżkach nauki)

Slavíček, Karel. Listy z Číny do vlasti, a jiná korespondence s evropskými hvězdáři (1716–1735). K vydání připravil Josef Kolmaš. Praha, Vyšehrad, 1995. 269 p., [16] p. of plates. illus., facsims., maps, plans, ports.

Contents: č. 1. P. Karla Slavíčka, misionáře T.J., listy z Číny do vlasti (1716–1727).—č. 2. Slavíčkova korespondence s evropskými hvězdáři.

Texts in Latin, German, or French, with Czech translations.

Smyth, Marina. Understanding the universe in seventh-century Ireland. Woodbridge, Suffolk, Rochester, N.Y., Boydell Press, 1996. 341 p. (Studies in Celtic history, 15)

See particularly chapter 6, "The Firmament" (p. 104–175).

Šprajc, Ivan. *Venus, lluvia y maíz: simbolismo y astronomía en la cosmovisión mesoamericana*. México, D.F., Instituto Nacional de Antropología e Historia, 1996. 176 p. illus., plan. (Serie Arqueología) (Colección científica, 318)

Stars in a cluster: Mt John University Observatory, tenth anniversary of the McLellan Telescope, hundredth anniversary of the Townsend Telescope, publications 1979–1995. Edited by W. Tobin & G. M. Evans. Christchurch, Dept. of Physics and Astronomy, University of Canterbury, 1996. 127 p. illus., maps, ports.

Sullivan, William. *The secret of the Incas; myth, astronomy, and the war against time*. New York, Crown Publishers, 1996. 413 p., [38] p. of plates. illus., maps.

Tasso, Torquato. *Note di Torquato Tasso a “De caelo” di Aristotele*. A cura di Luciano Capra. Ferrara, G. Corbo editore, 1993. 194 p. (Esami, 2)  
Text in Latin with notations in Italian.

Tübinger Schickard-Symposion, 2d, *Tübingen, 1992*. Zum 400. Geburtstag von Wilhelm Schickard. Zweites Tübinger Schickard-Symposion, 25. bis 27. Juni 1992. Hrsg. von Friedrich Seck. Sigmaringen, J. Thorbecke, 1995. 319 p. illus., facsimis. (Contubernium, Bd. 41)

Partial contents: Hübner, W. Die Christianisierung der Sternbilder in Schickards “Astroscopium.”—Mauder, H. Die Kometenschriften von Schickard und Kepler.—Gingerich, O. Mästlin’s, Kepler’s, and Schickard’s copies of “De revolutionibus.”—Betsch, G. Praxis geometrica und Kartographie an der Universität Tübingen im 16. und frühen 17. Jahrhundert.

Turner, Anthony J. *Mathematical instruments in antiquity and the Middle Ages, an introduction*. London, Vade-Mecum Press, 1994. 161 p., [24] p. of plates. illus.

Contents: 1. Antiquity and its heritage.—2. The medieval East: instruments in the Byzantine and Islamic empires.—3. The medieval West: instruments in Latin Christendom.  
Astronomical, navigational, and time-measuring instruments are included.

Ulugh Beg. *Astrology* (the fourth book of “Ziji jadidi Kuragoni”). Commentaries and preparation for publication by Ashraf Akhmad. *In his Ilmi nuzhum*. “Zizhi zhadii Kuragonii” türtinchi kitobi. Tarzhimon, izohlar muallifi va nashrga taiérlovchi Ashraf Ahmad. Toshkent, Abdulla Qodirii nomidagi Khalq merosi nashriëti, 1994. p. 37–74.

The volume also contains the text in Uzbek (p. 1–36) and Russian (p. 75–112). The English translation is by Bakhtiér Ermatov.

Utting, Muriel. *Astronomy in Western Australia*. v. 2. 1912 to 1940. Bickley, WA, Perth Observatory, 1994. 253 p. illus., ports.

Vartaka, Padmakara V. *Scientific knowledge in the Vedas*. Delhi, Dharam Hinduja International Centre of Indic Research, Delhi; Sole distributors, Nag Publishers, 1995. 161 p. (Exploratory papers, 2)  
Emphasizes astronomy and time-reckoning.

Wattenberg, Diedrich. *Wilhelm Olbers im Briefwechsel mit Astronomen seiner Zeit*. Stuttgart, Verlag für Geschichte der Naturwissenschaften und der Technik, 1995. 49 p. port. (Quellen der Wissenschaftsgeschichte, Bd. 2)

Indicates the library locations of correspondence between Olbers and 50 other astronomers. The existence of published correspondence is also noted. A brief sketch of each of the 50 correspondents is provided.

Wilson, R. N. *Reflecting telescope optics. 1. Basic design theory and its historical development*. Berlin, New York, Springer, 1996. 543 p. illus. (1 fold.), ports. (Astronomy and astrophysics library)

Zuidervaart, Huib J. Speculatie, wetenschap en vernunft; fysica en astronomie volgens Wytze Foppes Donguma (1707–1778), instrumentmaker te Leeuwarden. Ljouwert/Leeuwarden, Fryks Akademy, 1995. 206 p. illus. (Fryske histoaryske rige, nr. 12) (FA, nr. 814)

### Articles

Abhyankar, Krishna D. Hundred and twenty five years of Rayleigh scattering in the study of planetary atmospheres. In Royal Astronomical Society. Quarterly journal, v. 37, Sept. 1996: 281–295.

Abry, Josèphe H. La constellation du Fleuve dans le ciel gréco-romain. In Le Fleuve et ses métamorphoses. Textes présentés et édités par François Piquet. Actes du Colloque international tenu à l'Université Lyon 3-Jean Moulin les 13, 14 et 15 mai 1992. Paris, Didier érudition, 1994. p. 103–110. col. illus.

Abry, Josèphe H. Les noms des décans chez Firmicus Maternus (*Mathesis* IV, 22). Revue de philologie, de littérature et d'histoire anciennes, t. 67, fasc. 2, 1993: 197–228. illus.

Abstract in English: p. 397.

Abt, Helmut A. How long are astronomical papers remembered? In Astronomical Society of the Pacific. Publications, v. 108, Nov. 1996: 1059–1061. illus.

“For the 165 papers published in the *Astrophysical Journal* and *Supplements* in 1954, we counted the citations during 1955–1994. They show an exponential decay with a half-life of 29 yr.” A number of other interesting results are presented.

Adam, Madge G. The changing face of astronomy in Oxford (1920–60). In Royal Astronomical Society. Quarterly journal, v. 37, June 1996: 153–179. illus., ports.

Aiken, Jane A. The perspective construction of Masaccio's *Trinity* fresco and medieval astronomical graphics. In Artibus et historiae, an art anthology. no. 31. Vienna, IRSA, 1995. p. 171–187. illus. (part col.), facsim.

Allen, Danielle. A schedule of boundaries: an exploration, launched from the water-clock, of Athenian time. Greece & Rome, 2d ser., v. 43, Oct. 1996: 157–168.

Andami, Sara. Vulcain, la planète qui n'existe pas. Ciel et espace, no 315, juil./août 1996: 74–75. col. illus. (Idées fausses)

Andrews, A. David. Cyclopaedia of telescope makers. pt. 6 (Sin-Syk). Irish astronomical journal, v. 23, July 1996: 215–242. illus., facsimis., maps, ports.  
Another illustration appears on the front cover of the issue.

Ansari, S. M. Razaullah. On the transmission of Arabic-Islamic astronomy to medieval India. Archives internationales d'histoire des sciences, v. 45, déc. 1995: 273–297.  
“Selected List of Arabic-Islamic Astronomers and Their Works”: p. 288–295.

Arlot, Jean E. Le bicentenaire du Bureau des longitudes: de la navigation maritime à l'exploration du Système solaire. L'Astronomie, v. 110, sept. 1996: 235–239. illus., facsimis.  
Followed by a box, “Les publications du Bureau des longitudes” (p. 239).

Arlot, Jean E., and Sylvio Ferraz-Mello. Bruno Morando (1931–1995). In International Astronomical Union. Symposium, 172d, Paris, 1995. Dynamics, ephemerides and astrometry of the solar system. Proceedings of the 172nd Symposium of the International Astronomical Union, held in Paris, France, 3–8 July 1995. Edited by S. Ferraz-Mello, B. Morando and J.-E. Arlot. Dordrecht, Boston, Kluwer Academic Publishers, 1996. p. 1–2. port.

Arnaud, Daniel. L'édition ougaritaine de la série astrologique "Eclipses du dieu-Soleil." In *Semitica, cahiers publiés par l'Institut d'études sémitiques du Collège de France.* 45. Paris, Librairie d'Amérique et d'Orient A. Maisonneuve, 1996. p. 1–18.

Summary in English.

"The Ras Shamra clay fragment RS 23.038 bears the first and, as far as it can be ascertained nowadays, the second tablets of the pre-canonical series, entitled: 'The eclipses of the Sun-God'. With this Syrian version, the text of which is very close to that found in Bogazköy, one can catch a glimpse upon the prehistory of the canonical astrological omnia: *Enūma Anu Enlila*."

Reproduces recto and verso of the tablet fragment, with transcription and French translation.

Aveni, Anthony F., Michael P. Closs, and Horst Hartung. An appraisal of Baudez' appraisal of archaeoastronomy at Copan (and elsewhere). In *Indiana; Beiträge zur Völker- und Altertumskunde, Sprachen-, Sozial- und Geschichtsforschung des indianischen Lateinamerika.* 13. Berlin, Gebr. Mann, 1993. p. 87–95.

Bakhouche, Béatrice. Limites et quadrillages du ciel "de la sphère au globe" (à l'époque impériale). In *Frontières terrestres, frontières célestes dans l'antiquité. Études réunies et présentées par Aline Roussel.* Perpignan, Presses universitaires de Perpignan; Paris, Diffusion De Boccard, 1995. (Collection Études, no 20) p. 309–329. illus.

Baliński, Aleksander. Ziğ-i ḡadid-i sultānī Uħug Bega i Prodromus Astronomiae Jana Heweliusza. In *Libri Gedanenses.* t. 11/12; 1993/94. Gdańsk, Wydawn. Gdańskie, 1994. p. 99–102.

Summary in English.

Bangrazi, Alfio. L'astronomia e l'anatomia del mondo. In *Biblioteca casanatense. Il medico, l'arte, la scienza, la virtù; materiali per una ricerca bibliografica e iconografica su Paracelso nella Biblioteca Casanatense.* Roma, Edizioni Paracelso, 1993. p. 148–160. facsimis.

Bartha, Lajos, and Adrienne Buka. A rudabányai műemlék templom középkori napórája. [A medieval sundial on the historic church in Rudabánya] In *A Miskolci Herman Ottó Múzeum közleményei.* 27; 1991. Miskolc. p. 5–12. illus.

Baschek, Bodo. Nachruf: Albrecht Unsöld† 1905–1995. In *Astronomische Gesellschaft. Mitteilungen.* Nr. 79. Hamburg, 1996. p. 11–15. facsim., port.

Baum, Richard. William Lassell and 'the accident of a maid-servant's carelessness'; or, Why Neptune was not searched for at Starfield. In *British Astronomical Association, London. Journal,* v. 106, Aug. 1996: 217–219. port.

Beck, Sara C. Mid-infrared lines as astrophysical diagnostics: two decades of problems and promise. In *Amazing light. A volume dedicated to Charles Hard Townes on his 80th birthday.* Raymond Y. Chiao, editor. New York, Springer, 1996. p. 21–26.

"I have tried to show how one infrared astrophysical spectroscopist saw some frustrating problems in the field, which arose because our observational skills had gotten ahead of our theoretical underpinning."

Beekman, George W. E. De aarde beweegt, maar waar doorheen? *Zenit,* 23. jaarg., okt. 1996: 414–417. illus., ports.

On Michelson's 1881 experiment at the Astrophysikalische Observatorium in Potsdam.

Beer, Gillian. Eddington and the idiom of modernism. In *Science, reason, and rhetoric.* Edited by Henry Krips, J. E. McGuire, and Trevor Melia. Pittsburgh, Pa., University of Pittsburgh, 1995. (Pittsburgh-Konstanz series in the philosophy and history of science) p. 295–315.

See also Trevor Melia's "Comment: Standing on the Threshold," on p. 317–322.

Betts, Jonathan. Josiah Emery. *Antiquarian horology*, v. 22, spring-summer 1996: 394–401, 510–523; v. 23, autumn: 26–44. illus., facsimis., map, port.

Contents: pt. 1. Watchmaker of Charing Cross.—pt. 2. Precision pioneer.—pt. 3. The lever escapement.

Emery was among those interested “in designing and building precision timekeepers for finding the Longitude.”

Birmingham, John. John Birmingham on “Coggia’s comet. (Comet III., 1874.)” Originally published in the *Dublin University Magazine*. With an introd. by Paul Mohr. Irish astronomical journal, v. 23, July 1996: 209–214. illus.

Blaauw, Adriaan. Oort in memoriam. In International Astronomical Union. Symposium, 169th, *The Hague*, 1994. Unsolved problems of the Milky Way. Proceedings of the 169th Symposium of the International Astronomical Union, held in The Hague, the Netherlands, August 23–29, 1994. Edited by Leo Blitz and Peter Teuben. Dordrecht, Boston, Kluwer Academic Publishers, 1996. p. xiv–xvi. port.

Blume, Dieter. Regenten des Himmels—die Geschichte astrologischer Bilder im Mittelalter. In Der Himmel über der Erde; Kosmossymbolik in mittelalterlichen Kunst. Im Auftrag der Evangelischen Akademie Thüringens hrsg. von Friedrich Möbius. Leipzig, Evangelische Verlagsanstalt, 1995. p. 62–77. illus., facsimis.

The illustrations (no. 13–29) are bound at the end of the volume.

Böhm, Conrad, and Marco Fulle. Una cometa per Napoleone. L’Astronomia, anno 18, luglio 1996: 22–28. illus., col. facsimis., ports.

“Le condizioni osservative per la Hale-Bopp nel 1997 saranno molto simili a quelle della spettacolare cometa di 1811, ricordata anche da Tolstoi in *Guerra e Pace*.”

Böhm, Conrad. Il demone di John Goodricke. L’Astronomia, anno 18, luglio 1996: 64–65. col. facsimis., col. port. (Osservatorio del passato)

Böhm, Conrad. Pierre Janssen e le protuberanze solari. L’Astronomia, anno 18, ott. 1996: 64–65. illus., port. (Osservatorio del passato)

Börngen, Freimut. Dreissig Tautenburger Musiker-Planetoiden. Musica, 46. Jahrg., Nov./Dez. 1992: 361–363.

Finding that, of the 3,720 asteroids that had been named by the end of 1987, only 14 honored leaders in the world of music, Börngen named 30 objects he discovered at Tautenburg during 1988–92 for composers.

Bohigas B., Joaquín, and Antonio F. Sarmiento-Galan. Ciencia a la deriva: la política científica nacional ejemplificada por el caso del Instituto de Astronomía de la UNAM (1970–1991). Ciencia, revista de la Academia de la Investigación Científica, v. 45, marzo de 1994: 105–118. illus.

Abstract in English.

Bolton, H. C., and D. W. Coates. William Edwin James: designer and maker of astronomical optics. In Astronomical Society of Australia. Publications, v. 13, Oct. 1996: 258–267. illus., port.

Bonelli, Federico, and Lucio Rosso. The origin of modern astronomical theories of tides: Chrisogono, de Dominis and their sources. British journal for the history of science, v. 29, Dec. 1996: 385–401.

Bowen, Alan C., and Bernard R. Goldstein. Geminus and the concept of mean motion in Greco-Latin astronomy. Archive for history of exact sciences, v. 50, no. 2, 1996: 157–185.

Boxmeer, Henri van. Poussières d’archives ... Les méridiennes de Quetelet (suite). Le pavillon astronomique et la méridienne d’Ostende. Ciel et terre, v. 112, mars/avril 1996: 79–82. illus.

Bracher, Katherine. 25 years ago: the first issue of *Mercury* magazine. *Mercury*, v. 26, Jan./Feb. 1997: 7. (Echoes of the past)

"When the ASP launched *Mercury*, the 'Large Space Telescope' was in its planning stages, Carl Sagan was a well-regarded but obscure professor in upstate New York, and 'Pong' was about to start taxing the most advanced desktop computers. The magazine has now managed to survive 25 years and five editors."

Bracher, Katherine. 2400 years ago: in awe of the star. *Mercury*, v. 25, Nov./Dec. 1996: 7. illus. (Echoes of the past)

Discusses the scarcity of records of comets left by the ancient Greeks, with particular attention to the four mentioned by Aristotle.

Brecher, Kenneth, Howard E. Bond, Juhan Frank, and Joel E. Tohline. Ganesar Chanmugam. *Phsyics today*, v. 49, Dec. 1996: 76-77. port.

Brelstaff, Tristram. Red supergiants, neutrinos and the Double Cluster. In *British Astronomical Association, London. Journal*, v. 106, Oct. 1996: 246-251. illus.

"The Perseus Double Cluster is surrounded by one of the largest concentrations of red supergiant stars in the sky. As a consequence, the development of our understanding of the structure and evolution of these stars has been intimately connected with studies of the cluster. This paper traces the history of this connection from the end of the 19th century through to the early 1970s."

Breugelmans, Ronald, and Elly Dekker. Adriaan Anthonisz and the Gregorian calendar. In *Theatrum orbis librorum. Liber amicorum presented to Nico Israel on the occasion of his seventieth birthday*. Edited by Ton Croiset van Uchelen, Koert van der Horst and Günter Schilder. Utrecht, HES Publishers, Forum Antiquarian Booksellers, 1989. p. 137-157. facsimis. (1 fold. at end of volume)

Broughton, R. Peter. The contributions of Peter Fidler (1769-1822) to astronomy in Alberta. In *Royal Astronomical Society of Canada. Journal*, v. 90, Aug. 1996: 182.

Abstract only.

Broughton, R. Peter. James Craig Watson (1838-1880). In *Royal Astronomical Society of Canada. Journal*, v. 90, Apr. 1996: 74-81. illus., port.

"Canadians feel a bittersweet pride when young people leave to make their fame and fortune in the United States. The life of the eminent nineteenth century astronomer, J. C. Watson, is another example from history that our brightest and best emigrate when educational and career opportunities are lacking at home."

Brück, Mary T. Mary Somerville, mathematician and astronomer of underused talents. In *British Astronomical Association, London. Journal*, v. 106, Aug. 1996: 201-206. illus., facsimis., ports.

Brumana, Angelo. Per Domenico Bragadin e Marco Lippomano. In *Ateneo di Brescia. Commentari per l'anno 1989*. Brescia, 1990. p. 85-103. facsim.

On a 15th-century manuscript—A.IV.11 in the Biblioteca civica queriniana in Brescia—that contains a collection of mathematical and astronomical works.

Bumbacher, Stephan P. The astronomical significance of early Japanese architectural structures. In *Shadow, the journal of the Traditional Cosmology Society*. v. 10; 1993. Edinburgh. p. 44-53. illus., map, plan.

Capodieci, Luisa, and Cristiana Ilari. I segreti del tempo. Prime considerazioni sullo Zodiaco di palazzo d'Arco a Mantova. *Storia dell'arte*, n. 87, magg./ag. 1996: 141-167. illus.

Castells, Margarita, and Julio Samsó. Seven chapters of Ibn al-Ṣaffār's lost *zīj*. Archives internationales d'histoire des sciences, v. 45, déc. 1995: 229–262. illus., facsim.

Includes Arabic text transliterated from the Hebrew script in Paris B.N. heb. 1102, folios 1<sup>r</sup>–5<sup>r</sup>.

Cernuti, Silvia, and Adriano Gaspani. Chi scoprì Mira Ceti? L'Astronomia, anno 18, ag./sett. 1996: 30–37. illus. (part col.)

Includes discussion of a prehistoric Celtic site at Libenice (near Prague).

Chalmers, Alan. Galilean relativity and Galileo's relativity. In Correspondence, invariance and heuristics; essays in honour of Heinz Post. Edited by Steven French and Harmke Kamminga. Dordrecht, Boston, Kluwer Academic Publishers, 1993. (Boston studies in the philosophy of science, v. 148) p. 189–205.

“I shall argue that Galileo neither formulated nor defended Galilean relativity and that he could not possibly have done so given the means at his disposal.”

Chao, Benjamin F. “Concrete” testimony to Milankovitch cycle in earth's changing obliquity. Eos, v. 77, Oct. 29, 1996: 433. illus.

On monuments in Taiwan marking the changing location of the Tropic of Cancer.

Chapman, Allan. Historical note: Sir John Herschel and the Leeds Astronomical Society. In British Astronomical Association, London. Journal, v. 106, Oct. 1996: 252.

Chatterjee, Santimay. Meghnad Saha—the scientist and the institution builder. Indian journal of history of science, v. 29, Jan./Mar. 1994: 99–110.

Churiumov, Klim K. The life of S. K. Vsekhsvyatskij (1905–1984) as seen by a student and colleague. International comet quarterly, v. 18, Oct. 1996: 183–185. illus.

Cook, Sir Alan H. Halley and the saros. In Royal Astronomical Society. Quarterly journal, v. 37, Sept. 1996: 349–353.

Corgan, James X. Maury County Astronomical Society circa 1850. In Tennessee Academy of Science. Journal, v. 69, July/Oct. 1994: 76.

“The Maury County Astronomical Society, probably Tennessee's first single-discipline academic society in the pure sciences, was chartered in 1850. There were 15 charter members. The primary objective of the Society was ‘making original observations in Astronomy.’”

Cornish, Alison. Beatrice and the astronomical heavens. Lectura Dantis, no. 18/19, spring/fall 1996: 20–29.

Dadić, Žarko. Hermann the Dalmatian. In Hvar Observatory bulletin. v. 19; 1995. Zagreb. p. 39–53. illus.

Hermann “stands as a basic figure at the turning point of European science and the scientific endeavours from the 12<sup>th</sup> to the 15<sup>th</sup> century.”

Débarbat, Suzanne V. L'Annuaire du Bureau des longitudes a 200 ans. L'Astronomie, v. 110, sept. 1996: 240–243. facsimis.

Includes two boxes, “Loi créant le Bureau des longitudes” (p. 241), and “Règlement du Bureau des longitudes” (p. 242).

Débarbat, Suzanne V. Il y a 200 ans: le mètre. Observations et travaux, no 45, 1. trimestre 1996: 13–16.

The law of 18 germinal of the year 3 (Apr. 7, 1795) established the use of the metric system in France.

Débarbat, Suzanne V., and Jan Vondrák. Pražský přístroj pro Gaussovou metodu stejných výšek. [A Prague instrument for the equal altitude method of Gauss] DVT, dějiny věd a techniky, roč. 29, čís. 2, 1996: 89–99. illus.

Summary in English.

Dejaiffe, René J. Odon Godart (1913–1996). *Ciel et terre*, v. 112, mai/juin 1996: 102.

Dell'Anna, Giuseppe. I rapporti fra astronomia e geometria nella silloge dei testi editi in *Sphera cum commentis* (Venetiis 1518). *Schede medievali*, n. 24/25, genn./dic. 1993: 168–193. illus.

Del Toro Iniesta, José C. On the discovery of the Zeeman effect on the sun and in the laboratory. *Vistas in astronomy*, v. 40, pt. 2, 1996: 241–256.

Covers the period 1866–1908 in studying the “origin of the discoveries ... of the action of a magnetic field on spectral lines.”

Dicati, Renato. Il cielo in filigrana. *L'Astronomia*, anno 18, ott. 1996: 24–33. col. illus.

“La storia dell’astronomia, i protagonisti, gli strumenti, le ricerche raccontati nei francobolli di tutto il mondo.”

Dolby, William. A preliminary look at “twelve” in Chinese traditions. *In* Shadow, the journal of the Traditional Cosmology Society. v. 10; 1993. Edinburgh. p. 21–43.

“It is well known that the number twelve held a clear position of exceptional significance in ancient China, but a delving into the matter reveals a surprising ubiquity of its application. Its use in some cases seems little more than convenient encapsulation under a numerical heading, although the choice of the number in such instances is also suggestive of predispositions towards the number, but in many spheres, particularly in hoary antiquity, it was presented as of cosmic significance and there was evidently a considerable attempt to amalgamate various of its usages into a cosmically holistic system ... Unsurprisingly, in view of the phases of the moon, many of the terms with twelve in them are connected with the calendar.”

Dommangeat, Jean. Hommage à un amateur renommé, le docteur Paul Baize (1901–1995). *Ciel et terre*, v. 112, mai/juin 1996: 119–120. port.

Duerbeck, Hilmar W. 100 Jahre solare Radioastronomie. *Die Sterne*, Bd. 72, Heft 6, 1996: 314–323. illus., ports.

Edson, Evelyn. World maps and Easter tables: medieval maps in context. *In* *Imago mundi*, the international journal for the history of cartography. v. 48; 1996. London. p. 25–42. facsimis.

“Appendix: Diagrams in Early Computus Manuscripts”: p. 41–42.

“Medieval geographical texts and world histories have long been searched for world maps. One source which merits further exploration is the computistical or calendar manuscript, which is devoted to calculating the date of Easter. Computus manuscripts include T-O, zonal and ‘list’ maps, as well as more complex and detailed maps. Three of the complex maps are examined here, and their form and content related to their context.”

Eisenreich, Günther. Zum Tode des Mathematikers B. L. van der Waerden. Universität Leipzig, Apr. 1996: 23–24. port.

Eisenstaedt, Jean. L’optique balistique newtonienne à l’épreuve des satellites de Jupiter. *Archive for history of exact sciences*, v. 50, no. 2, 1996: 117–156.

Extracts from the diaries of the University of Toronto Southern Observatory. *In* Royal Astronomical Society of Canada. *Journal*, v. 90, Feb.–Apr. 1996: 7–17, 69–73. illus.

Contents: 1. Harris, W. E. The old days.—2. Madore, B. F., R. I. Jedrzejewski, and J. M. Matthews. The night of the supernova.

Federici Vescovini, Graziella. Michel Scot et la “Theorica planetarum Gerardi.” *Early science and medicine*, v. 1, June 1996: 272–282.

Abstract in English.

Feitzinger, Johannes V. Die Mondillusion und der gestauchte Himmel. *Sterne und Weltraum*, 35. Jahrg., Nr. 11, 1996: 835–837. illus. (part col.)

Fischer, Klaus. Das Naturverständnis bei Galilei. In *Naturauffassungen in Philosophie, Wissenschaft, Technik*. Hrsg. von Lothar Schäfer und Elisabeth Ströker. Bd. 2. Renaissance und frühe Neuzeit. Freiburg im Breisgau, K. Alber, 1994. p. 149–183.

Frawley, David. Planets in the Vedic literature. *Indian journal of history of science*, v. 29, Oct./Dec. 1994: 495–506.

Fredrick, Laurence W. Peter van de Kamp (1901–1995). In *Astronomical Society of the Pacific Publications*, v. 108, July 1996: 556–559. ports.

French, Roger. Foretelling the future; Arabic astrology and English medicine in the late twelfth century. *Isis*, v. 87, Sept. 1996: 453–480.

Gascoigne, S. C. B. The Great Melbourne Telescope and other 19th-century reflectors. In *Royal Astronomical Society. Quarterly journal*, v. 37, June 1996: 101–128. illus., facsim.

Gent, Rob H. van. Nogmaals: de fresco's van Qusayr 'Amra. *Zenit*, 23. jaarg., nov. 1996: 478. illus.

Genuth, Sara S. Tools for teaching and research: John Prince, the Deerfield Academy, and educational reform in the early republic. *Rittenhouse*, v. 10, Aug. 1996: 97–120. illus., port.  
Astronomical instruments are among those described and illustrated.

Giordmaine, Joseph A. Microwave spectroscopy, the maser, and radio astronomy: Charles Townes at Columbia. In *Amazing light. A volume dedicated to Charles Hard Townes on his 80th birthday*. Raymond T. Chiao, editor. New York, Springer, 1996. p. 273–275.

Glasner, Ruth. Gersonides's theory of natural motion. *Early science and medicine*, v. 1, June 1996: 151–203.

Goddu, André. The logic of Copernicus's arguments and his education in logic at Cracow. *Early science and medicine*, v. 1, Feb. 1996: 28–68.

Goddu, André. Music as art and science in the fourteenth century. In *Scientia und ars im Hoch- und Spätmittelalter*. Hrsg. von Ingrid Craemer-Ruegenberg und Andreas Speer. 2. Halbbd. Berlin, New York, W. de Gruyter, 1994. (*Miscellanea mediaevalia*, Bd. 22/2) p. 1023–1045. illus.

"This essay provides a glimpse of how some changes in the music of the fourteenth century are related to the emergence of modern harmony and modern science." Includes discussion of astronomy.

Godman, Peter. The search for Urania; cosmological myth in Bernardus Silvestris and Pontano. In *Innovation und Originalität*. Hrsg. von Walter Haug und Burghart Wachinger. Tübingen, M. Niemeyer, 1993. (*Fortuna vitrea*, Bd. 9) p. 70–97.

"No one, among Milton's predecessors, had ranged further into unexplored territory in search of Urania than Bernardus Silvestris and Giovanni Gioviano Pontano. This study follows their attempts, through a recreation of cosmological myth, to ascend the empyrean."

Goldstein, Bernard R., and Josep Chabàs. Ibn al-Kammâd's star list. *Centaurus*, v. 38, no. 4, 1996: 317–334.

Gorman, Michael J. A matter of faith? Christoph Scheiner, Jesuit censorship, and the trial of Galileo. *Perspectives on science*, v. 4, fall 1996: 283–320. facsim.

"A document discovered in the Roman archives of the Jesuits ... suggests that Scheiner did not initiate the 1632–33 proceedings against Galileo ..."

Grant, Edward. When did modern science begin? American scholar, v. 66, winter 1997: 105–113.

“... the momentous changes in the exact sciences of physics and astronomy that epitomized the scientific revolution did not develop from a vacuum. They could not have occurred without certain foundational events that were unique products of the late Middle Ages.”

Green, Daniel W. E. On the history of total-visual-magnitude estimation methods. International comet quarterly, v. 18, Oct. 1996: 186–204.

“Appendix 1. Translation of Holetschek”: p. 203–204.

Greenfield, Jonas C. The names of the zodiacal signs in Aramaic and Hebrew. In Au carrefour des religions. Mélanges offerts à Philippe Gignoux. Textes réunis par Rika Gyselen. Publiés avec le concours de l’Institut français de recherche en Iran. Bures-sur-Yvette, Groupe pour l’étude de la civilisation du Moyen-Orient, 1995. (Res orientales, 7) p. 95–103. illus.

“The names of the zodiacal signs in the Aramaic dialects and in Hebrew are studied in relation to the earlier Akkadian and Sumerian names. The iconography of the signs in the various traditions is also discussed.”

Gregory, Andrew. Astronomy and observation in Plato’s *Republic*. Studies in history and philosophy of science, v. 27, Dec. 1996: 451–471.

Grenet, Frantz. Mithra et les planètes dans l’Hindukush central: essai d’interprétation de la peinture de Dokhtar-i Nôshirvân. In Au carrefour des religions. Mélanges offerts à Philippe Gignoux. Textes réunis par Rika Gyselen. Publiés avec le concours de l’Institut français de recherche en Iran. Bures-sur-Yvette, Groupe pour l’étude de la civilisation du Moyen-Orient, 1995. (Res orientales, 7) p. 105–119. illus.

Summary in English.

Gretchko, John M. J. Herman Melville and Elijah Burritt’s astronomy. Herman Melville and Andreas Cellarius. In his Melvillean ambiguities. Cleveland, Falk & Bright Publishers, 1990. p. 40–49. illus.  
Short essays arguing that Melville may have (1) owned Burritt’s *Geography of the Heavens* and (2) seen the charts of Julius Schiller’s Christian constellations in Cellarius’s *Harmonia Macrocosmica*.

Griesser, Markus. Neptun, der errechnete Planet. Orion, 54. Jahrg., Okt. 1996: 205–209. illus., ports.

“Vor 150 Jahren wurde in Berlin der achte Sonnentabant entdeckt.”

Includes a box, “Schon Galileo Galilei beobachtete Neptun” (p. 208).

Griffin, Rita Elizabeth M. Obituary: Henry Frederick Tiarks, 1900 September 8–1995 July 2. In British Astronomical Association, London. Journal, v. 106, Aug. 1996: 225–226. port.

Guicciardini, Niccolò. An episode in the history of dynamics: Jakob Hermann’s proof (1716–1717) of Proposition 1, Book 1, of Newton’s *Principia*. Historia mathematica, v. 23, May 1996: 167–181. illus.

Gunn, A. G. Astronomical clocks at Armagh Observatory. Irish astronomical journal, v. 23, July 1996: 198–204. illus.

Guthrie, James R. “A revolution in locality”: astronomical tropes in Emily Dickinson’s poetry. Midwest quarterly, v. 37, summer 1996: 365–382.

Haddad, Leila. Enquête: les richesses cachées de l’Observatoire de Paris. Ciel et espace, no 317, oct. 1996: 64–69. col. illus., col. ports.

Includes a box, “Petite histoire d’un haut lieu” (p. 69).

Hall, John B. Jacobus van Wageningen, Manilius, and Housman. In Latin studies in Groningen, 1877–1977.

Edited by Heinz Hofmann. Groningen, E. Forsten, 1990. p. 57–72. port.

Contrasts the work of two editors of the *Astronomicon*.

The portrait faces p. 57.

Hantsche, E. Multiple heliozentrische Konjunktionen der Planeten. Die Sterne, Bd. 72, Heft 5, 1996: 264–281. illus.

Haupt, Hermann. Der Beginn des Wassermannzeitalters, eine astronomische Frage? In Österreichische Akademie der Wissenschaften. *Mathematisch-naturwissenschaftliche Klasse. Anzeiger*, 129. Jahrg., Nr. 8, 1992: 77–80.

Haupt, Hermann. Nachruf: Guntram Schrutka† 1910–1995. In Astronomische Gesellschaft. Mitteilungen. Nr. 79. Hamburg, 1996. p. 9–10. port.

Hellot, Roger. La SAFGA [le Groupe d'Alsace de la Société astronomique de France] fête ses 65 ans. L'Astronomie, v. 110, sept. 1996: 244–245. illus.

Henarejos, Philippe, and Jean E. Arlot. Bureau des longitudes: la guerre des mers. Science et vie, no 938, nov. 1995: 110–115. illus. (part col.), col. map, ports. (Histoires)

“Le Bureau des longitudes a 200 ans. Né à la fin de la Révolution française, il a d'abord une mission stratégique: maîtriser les mers et mettre fin à la ‘tyrannie’ britannique. Il joue aujourd’hui un rôle déterminant dans la navigation ... interplanétaire.”

Henarejos, Philippe. Neptune: la guerre des pères. Science et vie, no 947, août 1996: 118–123. illus. (part col.), col. ports. (Histoires)

“À qui revient le mérite de la découverte, en 1846, de Neptune, huitième planète du système solaire? Au Français Urbain Le Verrier ou au Britannique John Couch Adams? La passionnante aventure illustre surtout le triomphe du calcul scientifique ...”

Hentschel, Klaus, and Monika Renneberg. Eine akademische Karriere: der Astronom Otto Heckmann im Dritten Reich. Vierteljahrshefte für Zeitgeschichte, 43. Jahrg., Okt. 1995: 581–610.

Hernschier, Wolfgang. Die “erfundenen” Kometen des Ritters d'Angos. Sterne und Weltraum, 35. Jahrg., Nr. 10, 1996: 736–738. facsim., port.

Herrán, José de la. Pintores científicos mexicanos. Ciencia y desarrollo, v. 19, jul./agosto de 1993: 82–83. col. illus.

Discusses and illustrates paintings of the great comet of 1882 made by Hermenegildo Bustos and José María Velasco. A photograph of the comet taken by David Gill in South Africa is also reproduced.

Hetherington, Norriss S. Plato and Eudoxus: instrumentalists, realists, or prisoners of themata? Studies in history and philosophy of science, v. 27, June 1996: 271–289. illus.

“Some scientists have become Rorschach inkblot tests: in them historians find what they already have in their own psyches and intellects. Such is the case for interpretations of Plato and Eudoxus and what it meant for ancient Greek astronomers ‘to save the phenomena’.”

Hiscock, Philip. The true blue moon. Griffith observer, v. 60, July 1996: 16–18, 21.

On a search for the origin of the term as signifying a second full moon in a given month.

Hoffleit, Dorrit. Pre-MK classifications and spectroscopic absolute magnitudes. In Objective-prism and other surveys. A meeting in memory of Nicholas Sanduleak, May 9–11, 1991, Van Vleck Observatory, Middletown, Conn. Edited by A. G. Davis Philip and Arthur R Upgren. Schenectady, N.Y., L. Davis

Press, 1991. (Van Vleck Observatory contribution, no. 12) p. 115–124. illus.  
Discussion: p. 125–126.

Horváth, József, and László Molnár. Újabb adalékok a herényi astrofizikai obszervatórium alapítóinak tevékenységéhez. [New data on the founders of the Herényi Astrophysical Observatory] In Természettudományok. 1. Szombathely, 1988. (A Szombathelyi Berzsenyi Dániel Tanárképző Főiskola Tudományos közleményei, 6) p. 5–27. illus., facsims., ports.  
English summary.

Houdt, Toon van. Handel, winst en toekomst. Over astrologie en kansrekening in het economisch denken van de late scholastiek. De Zeventiende eeuw, jaarg. 11, nr. 2, 1995: 223–238.

Hoyer, Ulrich. Das Naturverständnis Johannes Keplers. In Naturauffassungen in Philosophie, Wissenschaft, Technik. Hrsg. von Lothar Schäfer und Elisabeth Ströker. Bd. 2. Renaissance und frühe Neuzeit. Freiburg im Breisgau, K. Alber, 1994. p. 101–138. illus.

Hromnik, Cyril A. Ancient Indian religious astronomy in the stone ruins of Komatiland, South Africa. In Astronomical Society of Southern Africa. Monthly notes, v. 55, June 1996: 69–77. illus., plan.

Hübner, Wolfgang. Zur neuplatonischen Deutung und astrologischen Verwendung der Dodekaoros. In Φιλοφρονημα. Festschrift für Martin Sicherl zum 75. Geburtstag. Von Textkritik bis Humanismusforschung. Hrsg. von Dieter Harlfinger. Paderborn, F. Schöningh, 1990. (Studien zur Geschichte und Kultur des Altertums, n.F., 1. Reihe, Monographien, 4. Bd.) p. 73–103. facsims.

Humphreys, Colin J., and W. G. Waddington. The Jewish calendar, a lunar eclipse and the date of Christ's crucifixion. Tyndale bulletin, v. 43, Nov. 1992: 331–351.

Hunt, John L. James Glaisher FRS (1809–1903), astronomer, meteorologist and pioneer of weather forecasting: 'a venturesome Victorian.' In Royal Astronomical Society. Quarterly journal, v. 37, Sept. 1996: 315–347. illus., ports.

Husty, Peter, and Peter Friess. Die Firmiansuhr. Klassik-Uhren, 17. Jahrg., Dez. 1994/Jan. 1995: 32–41. illus. (part col.)

The clock was made in Salzburg about 1730 for Archbishop Firmian. It has three dials that display 23 kinds of astronomical and calendrical, as well as horological, data. It recently underwent a thorough restoration and is now on display at the Salzburger Barockmuseum.

Israel, Werner. Imploding stars, shifting continents, and the inconstancy of matter. Foundations of physics, v. 26, May 1996: 595–616.

"Two revolutionary concepts of the twentieth century—continental drift and the existence of superdense stars and black holes—had extended histories which ran in curious parallel for five decades. Between the wars each encountered a fierce and emotionally charged resistance which may have had a common psychological root. Each threatened man's instinctive faith in the permanence of matter."

Jackson, Francine. If he had lived: the promising but brief career of Jeremiah Horrox. Griffith observer, v. 60, Aug. 1996: 2–8. illus.

Jendritzki, Hans, and Herbert Dittrich. Eine Sternzeituhr "Patent Strömgren og Olsen." Klassik-Uhren, 18. Jahrg., Feb./März 1995: 56–65. illus. (part col.), facsims., ports.

Patented in 1918 by Svante Elis Strömgren, director of the Copenhagen observatory, and Jens Olsen, watchmaker, the watch has a central minute hand, a small second dial, and two hour dials, one of them keeping sidereal time. It was intended primarily for use at sea and was much less costly than a ship's chronometer.

- Jenkins, Edward S. Benjamin Banneker—eighteenth century astronomer (1731–1806). In *his To fathom more: African American scientists and inventors*. Lanham, University Press of America, 1996. p. 1–20.
- Jodra, Serge. L'astronomie dogon: les étoiles du sacrifice. *Ciel et espace*, no 313, mai 1996: 64–69. col. illus. Includes two boxes, “Une carte de l'univers: la figure d'Igibie” (p. 65), and “La séparation des jumeaux” (p. 66).
- Jodra, Serge. La nébuleuse histoire de nébulium. *Ciel et espace*, no 316, sept. 1996: 54–55. col. illus. (Idées fausses)
- Jodra, Serge. Némésis l'obscuré fiancée du Soleil. *Ciel et espace*, no 317, oct. 1996: 70–71. col. illus. (Idées fausses)
- Johansson K., Patrick. Latidos del tiempo Náhuatl. *Ciencia y desarrollo*, v. 22, mayo/jun. de 1996: 58–65. col. illus., col. facsimis.
- Johnston, Sean F. Making light work: practices and practitioners of photometry. *History of science*, v. 34, Sept. 1996: 273–302.
- Jones, Alexander. The date of the astronomical almanac *Tab. Amst.* inv. 1. In *Chronique d'Égypte*. 68; 1993. Bruxelles, Fondation égyptologique Reine Elisabeth. p. 178–185. illus.
- Kallinen, Maija. The body of knowledge: physical theories at the University of Turku. 2. The structure of the cosmos. In *her Change and stability; natural philosophy at the Academy of Turku (1640–1713)*. Helsinki, Suomen Historiallinen Seura, 1995. (*Studia historica*, 51) p. 138–177. facsimis.  
See also the section entitled “Laurbecchius Against the Revival of ‘Copernico-Cartesiana’” (p. 285–293).
- Karlsen, Helge B. J. Die Chor-Uhr in der Kathedrale von Chartres. *Klassik-Uhren*, 19. Jahrg., Feb./März 1996: 38–44. illus. (part col.)  
German translation by Richard Knerr.  
The astronomical clock in the choir of the cathedral at Chartres is first mentioned in 1407. Only the astronomical part escaped destruction in 1789.
- Kay, Richard. L'astrologia di Dante. In *Dante e la scienza. Atti del Convegno internazionale di studi “Dante e la scienza,” organizzato dall'Opera di Dante e dalla Biblioteca Classense di Ravenna, Ravenna, 28–30 maggio 1993*. A cura di Patrick Boyde e Vittorio Russo. Ravenna, Longo editore, 1995. (*Interventi classensi*, 16) p. 119–132.  
Translated from English by Isabella Zane.
- Kellermann, Kenneth I. John Gatenby Bolton (1922–1993). In *Astronomical Society of the Pacific. Publications*, v. 108, Sept. 1996: 729–737. ports.
- Kellner, Herbert A. Kepler, Bach, and Gauss: the celestial harmony of the earth's motion. Bach, journal of the Riemenschneider Bach Institute, Baldwin-Wallace College, v. 25, spring/summer 1994: 46–56.  
“Reprinted with the permission of the author.” Source not indicated.  
“For over one century there has been a revival of interest in harmonical research with varying degrees of success and significance. More recently, there has also been a growing occupation with the biography and *œuvre* of Kepler. By the results of the non-linear approach here discussed, the idea of cosmic harmony which fascinated that genius so profoundly ... has materialized once more: a natural link unifying astronomy, the intervals of music and geometry, has been established.”
- Kemp, Martin. Temples of the body and temples of the cosmos: vision and visualization in the Vesalian and Copernican revolutions. In *Picturing knowledge; historical and philosophical problems concerning the*

use of art in science. Edited by Brian S. Baigrie. Toronto, Buffalo, University of Toronto Press, 1996. p. 40–85. illus., facsimis.

Kennedy, Edward S. Treatise V of Kāshī's Khāqāni zij: determination of the ascendant. In *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften*. Bd. 10; 1995/96. Frankfurt am Main, Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität, 1996. p. 123–145. illus.

Kippenhahn, Rudolf. The heavens and the earth. *History today*, v. 46, Nov. 1996: 8–13. illus. (part col.), ports.

For a special issue on the second millennium, describes “how astronomy has altered our vision of the universe—from 10th-century Cairo to the Big Bang.”

Klimka, Libertas. Lietuvių kalendoriniai papročiai: sisteminis požiūris. [Lithuanian calendar customs from the systematic point of view] *Liaudies kultūra*, nr. 4, 1996: 25–28. illus.  
English summary.

Kokott, Wolfgang. Theorie und Augenschein in Peurbachs Kometenschrift von 1456. *Die Sterne*, Bd. 72, Heft 4, 1996: 210–222. illus., facsim.

Presented at the September 1995 meeting of the Astronomische Gesellschaft in Bonn.

Kox, Anne J., and W. P. Troelstra. Uit het Zeeman-archief: de ontdekking van het Zeeman effect. *Gewina*, jaarg. 19, nr. 3, 1996: 153–166. facsim., port.  
Summary in English.

Kragh, Helge. Gamow's game: the road to the hot big bang. *Centaurus*, v. 38, no. 4, 1996: 335–361. illus.

Kunitzsch, Paul. The role of al-Andalus in the transmission of Ptolemy's *Planisphaerium* and *Almagest*. In *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften*. Bd. 10; 1995/96. Frankfurt am Main, Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität, 1996. p. 147–155.

Landolfi, Luciano. Andromeda: intreccio di modelli e punti di vista in Manilio. *Giornale italiano di filologia*, 45, 15 nov. 1993: 171–194.

Landolfi, Luciano. Manilio e gli eroi della Via Lattea: tra doctrina e ideologia. *Giornale italiano di filologia*, 42, 15 magg. 1990: 87–98.

Laney, Clifton D. African starlight. In *Astronomical Society of Southern Africa. Monthly notes*, v. 55, June-Aug. 1996: 94–96, 110–112.

“Astronomy in South Africa and the SAAO.” Written for the observatory's 175th anniversary.

La Taille, Renaud de. Et mètre devint la mesure de toute chose ... *Science et vie*, no 939, déc. 1995: 106–111. col. illus., col. facsimis., col. map, col. ports. (Histoires)

“Les poids et les mesures vivaient dans la confusion la plus totale, quand les fils de la Révolution décrétèrent, en 1795, un nouvel ordre du monde: le mètre. L'histoire de sa définition est l'une des plus grandes aventures de la science. Malgré quelques poches de résistance, sa suprématie est aujourd'hui incontestée.”

Lerner, Michel P. La science galiléenne selon Tommaso Campanella. *Bruniana & Campanelliana*, anno 1, n. 1/2, 1995: 121–156.

Summary in English.

“It is shown that most of the conclusions which Galileo came to in the field of physics were debated and rejected by Campanella, together with the philosophical approach and epistemology which underlay them.”

- Lindemann, Ton. Wat zagen onze voorouders aan de hemel? *Zenit*, 23. jaarg., juli/aug. 1996: 335–339. facsims. (part col.)  
 Includes a box, “De totale zonsverduistering van 17 juni 1433” (p. 339).
- Liu, Ci-yuan. An analysis of Lishu Jiazi Pian (calendrics) of Shiji. *Acta astronomica sinica*, v. 37, no. 1, 1996: 105–112.  
 This reference, with English abstract, appears in *Chinese Astronomy and Astrophysics*, v. 20, July/Sept. 1996, p. 381. The vernacular version of the cited journal title is *T'ien wen hsüeh pao*.
- Lochak, Georges. L'incontournable Henri Poincaré. *Ciel et espace*, no 316, sept. 1996: 66–69. ports.
- Longo, Giuseppe, and Tiziana Longo. Nettuno: il trionfo della meccanica celeste. *L'Astronomia*, anno 18, ag/sett. 1996: 24–29. illus. (part col.), ports. (part col.)
- Lynden-Bell, Donald. Subrahmanyan Chandrasekhar (1910–1995). In *Royal Astronomical Society. Quarterly journal*, v. 37, June 1996: 261–263.
- Maas, Jörg F. Zur Konstruktion moderner Wissenschaft. 4. Kapitel. Metaphysische Voraussetzungen neuzeitlicher Naturwissenschaften: die mathematischen Wissenschaften und die Astronomie. In his “Novitas Mundi”: die Ursprünge moderner Wissenschaft in der Renaissance. Stuttgart, M & P Verlag für Wissenschaft und Forschung, 1995. p. 59–84.
- McFarland, John. Kenneth Essex Edgeworth—Victorian polymath and founder of the Kuiper Belt? *Vistas in astronomy*, v. 40, pt. 2, 1996: 343–354. illus., ports.
- Maeder, André. Edith A. Müller (1918–1995). In *Royal Astronomical Society. Quarterly journal*, v. 37, June 1996: 267–268.
- Mädlow, Edgar. Die Privatsternwarte des Bankiers Wilhelm Beer zu Berlin. *Die Sterne*, Bd. 72, Heft 5, 1996: 295–298. illus., map.
- Magaña, Edmundo. Orion y Sirio en la mitología taréno. In *Indiana; Beiträge zur Völker- und Altertumskunde, Sprachen-, Sozial- und Geschichtsforschung des indianischen Lateinamerika*. 13. Berlin, Gebr. Mann, 1993. p. 133–150.  
 “Una primera versión de este artículo fue presentada como texto de una conferencia sobre astronomía taréno para el Antropologisch-Sociologisch Centrum, Universidad de Amsterdam, el 3 de abril de 1987. Los datos provienen de una expedición de campo realizada entre septiembre y octubre de 1985.”
- Mandel, Corinne. Perseus and the Medici. *Storia dell'arte*, n. 87, magg./ag. 1996: 168–187. illus.  
 Includes discussion of astrological considerations.
- Mannery, Pierre. Luce, sainte chrétienne ou prêtresse du soleil? *Navigation*, v. 44, janv. 1996: 90–96.  
 “The author's attention has been drawn to the apparent untruth of the old dictum concerning the St. Lucy's day (13th december). Is it due to the shifting between the julian and gregorian calendars decided during the 16th century. This statement seems to be confirmed by the examination of the dictums concerning the days after 13th december and related to the change in the day duration.”
- Maranini, Anna. Fu di Pesaro un primo grande filologo maniliano? *Giornale italiano di filologia*, 43, 15 nov. 1991: 265–298.
- Maranini, Anna. Manilio e Giovenale. *Giornale italiano di filologia*, 46, 15 magg. 1994: 79–87. facsim.
- Maranini, Anna. Manilio nella tradizione polemica di Beliardi. *Giornale italiano di filologia*, 47, 15 nov. 1995: 283–291.

Markowski, Mieczysław. Nie znane dzieło Jana Regiomontana o komecie. In *Studia mediewistyczne*. 30. Warszawa, Wydawn. IFiS PAN, 1993. p. 27–31.  
Summary in German.

Markowski, Mieczysław. Von den mittelalterlichen Ansätzen eines Wandels zum kopernikanischen Umbruch im Wissenschaftsverständnis. In *Scientia und ars im Hoch- und Spätmittelalter*. Hrsg. von Ingrid Craemer-Ruegenberg und Andreas Speer. 1. Halbbd. Berlin, New York, W. de Gruyter, 1994. (Miscellanea mediaevalia, Bd. 22/1) p. 79–94.

Marriott, R. A. The life and legacy of G. H. With, 1827–1904. In *British Astronomical Association, London. Journal*, v. 106, Oct. 1996: 257–264. illus., facsimis., ports.

Marsden, Brian G. Antonín Mrkos (1918–1996). *International comet quarterly*, v. 18, Oct. 1996: 182–183.

Martin, Troy. Pagan and Judeo-Christian time-keeping schemes in Gal 4.10 and Col 2.16. *New Testament studies*, v. 42, Jan. 1996: 105–119.

Marvin, Ursula B. Ernst Florens Chladni (1756–1827) and the origins of modern meteorite research. *Meteoritics & planetary science*, v. 31, Sept. 1996: 545–588. illus. (part col.), facsimis. (part col.), maps, col. port.

Another color illustration appears on the front cover of the issue.

Mattig, Wolfgang. Hans-Heinrich Voigt und die Göttinger Sonnenphysik. *Sterne und Weltraum*, 35. Jahrg., Nr. 11, 1996: 818–823. illus. (part col.), ports. (part col.)

Maurice, Klaus, and Peter Friess. Das Meisterstück von Wilhelm Pepfenhauser. *Klassik-Uhren*, 18. Jahrg., Aug./Sept. 1995: 22–31. illus. (part col.)

“Wahrscheinlich im Jahre 1647 fertigte der Augsburger Uhrmacher als Meisterstück eine Tischuhr mit zahlreichen astronomischen Funktionen.” The clock disappeared from the Fürstliche Kunstsammlung in Gotha after the Second World War but has since been returned.

Includes a section on other clocks produced by Pepfenhauser, and a box, “Die Uhrensammlung des Schlossmuseums Gotha,” by Uta Däberitz (p. 28).

Maury, Jean P. Christiaan Huygens: la naissance de la précision. *Ciel et espace*, no 314, juin 1996: 66–69. col. illus., col. port.

Meis, Reinhard, and Christian Pfeiffer-Belli. Zehn Tage, die es nie gab: Kalender und Kalenderuhren. *Klassik-Uhren*, 19. Jahrg., Feb./März 1996: 19–28. illus. (part col.)

Includes a box, on p. 22–23, “Wie wir zu unserer Zeitrechnung kommen: das ‘Julianische’ und das ‘Gregorianische’ Kalendersystem,” signed glb (Gisbert L. Brunner).

Melbourne, Jason. Cosmology: storytelling on the grand scale. *Griffith observer*, v. 60, Nov. 1996: 2–15, 21. illus., ports.

Another illustration appears on the outside front cover of the issue (caption on p. 3).

Michal, Stanislav. Astronomische Kunstuhren von Johannes Klein [1684–1762] *Klassik-Uhren*, 19. Jahrg., Apr./Mai 1996: 42–49. illus. (part col.)

Miles, Kathy A. Seeing further: the legacy of Robert Hooke. *Griffith observer*, v. 60, July 1996: 2–10. illus., ports.

Möbius, Friedrich. Kosmosvorstellungen in der mittelalterlichen Sakralarchitektur. Zu religionsgeschichtlichen Aspekten von Grundsteinlegung und Orientation. In *Der Himmel über der Erde; Kosmossymbolik in mittelalterlichen Kunst. Im Auftrag der Evangelischen Akademie Thüringens* hrsg. von Friedrich Möbius. Leipzig, Evangelische Verlagsanstalt, 1995. p. 107–123.

Morando, Bruno. Deux cents ans de mécanique céleste sous les auspices du Bureau des longitudes. In International Astronomical Union. Symposium, 172d, Paris, 1995. Dynamics, ephemerides and astrometry of the solar system. Proceedings of the 172nd Symposium of the International Astronomical Union, held in Paris, France, 3–8 July 1995. Edited by S. Ferraz-Mello, B. Morando and J.-E. Arlot. Dordrecht, Boston, Kluwer Academic Publishers, 1996. p. 3–16. illus.

Abstract in English.

Moreira, Ildeu de Castro, and Lenice Reis de Oliveira. Observações e medidas físicas e astronômicas no período colonial brasileiro. Quipu, v. 11, enero/abr. 1994: 63–84.

Summary in English.

Mosterín, Jesús. Philosophy and cosmology. In Spanish studies in the philosophy of science. Edited by Gonzalo Munévar. Dordrecht, Boston, Kluwer Academic Publishers, 1996. (Boston studies in the philosophy of science, v. 186) p. 57–88.

Narlikar, Jayant V. Four questions that history might answer. In Science, philosophy and culture; multidisciplinary explorations. pt. 1. Edited by D. P. Chatopadhyaya, Ravinder Kumar. New Delhi, Project of History of Indian Science, Philosophy and Culture in association with Indian Council of Philosophical Research; Distributed by Munshiram Manoharlal Publishers, 1996. p. 178–184.

The questions are: 1) What is the scientific content of the Vedas? 2) Can astronomical allusions be used to date ancient writings? 3) Were any supernovae observed in India during the Siddhāntic period? and 4) Why did scientific activity decline after the Siddhāntic period?

Navarro Brotóns, Victor. La ciencias [sic] en la España del siglo XVII: el cultivo de las disciplinas fisico-matemáticas. Arbor, t. 153, abr./mayo 1996: 197–252.

Needham, Joseph. Chinese astronomy and the Jesuit mission; an encounter of cultures. In Scientific aspects of European expansion. Edited by William K. Storey. Aldershot, Hants, Brookfield, Vt., Variorum, 1996. (An Expanding world, v. 6) p. 283–303. facsim.

First published in London in 1958 by the China Society as no. 10 in its series of Occasional Papers.

Nityananda, R. Subrahmanyam Chandrasekhar. Current science, v. 69, Sept. 25, 1995: 554–556. ports.

Ōhashi, Yukio. Astronomical instruments in classical Siddhāntas. Indian journal of history of science, v. 29, Apr./June 1994: 155–313. illus.

Includes passages in Sanskrit.

Ōhashi, Yukio. Prof. K. S. Shukla's contribution to the study of the history of Hindu astronomy. Ganita-Bhāratī, v. 17, no. 1/4, 1995: 29–44. port.

Oliviero, Adriana. La composizione dei cieli in restoro d'Arezzo e in Dante. In Dante e la scienza. Atti del Convegno internazionale di studi "Dante e la scienza," organizzato dall'Opera di Dante e dalla Biblioteca Classense di Ravenna, 28–30 maggio 1993. A cura di Patrick Boyde e Vittorio Russo. Ravenna, Longo editore, 1995. (Interventi classensi, 16) p. 351–362.

Olson, Paul A. Plato revisited: the Florentine Platonists and the astronomers. In his The journey to wisdom; self-education in patristic and medieval literature. Lincoln, University of Nebraska Press, 1995. p. 172–199.

O'Mara, Patrick F. Can the Gizeh pyramids be dated astronomically? 3. Pepi's jubilee: its promise and its problems. Discussions in Egyptology, 35, [May?] 1996: 97–112. illus.

The first two parts were cited in *H.A.D. News* no. 38.

Osterbrock, Donald E. Nicholas Ulrich Mayall, May 9, 1906–January 5, 1993. In National Academy of Sciences. Biographical memoirs. v. 69. Washington, D.C., National Academy Press, 1996. p. 188–212. port.

Oudet, Jean F. Le style de Desargues: l'observation associée à la théorie pour placer le style d'un cadran solaire. In Actes du colloque "Girard Desargues," Paris-Lyon. Nantes, Université de Nantes, Centre François Viète, Histoire des sciences et des techniques, 1994. (Sciences et techniques en perspective, v. 29/30) p. 331–339. illus.

P. G. Mezger's career, contributions, and influences. In The Nuclei of normal galaxies; lessons from the galactic center. Edited by R. Genzel and A. I. Harris. Dordrecht, Boston, Kluwer Academic Publishers, 1994. (NATO ASI series. Series C, Mathematical and physical sciences, v. 445) p. 467–488. illus., group port.

Contents: Heeschen, D. S. Reminiscence.—Moran, J. M. Peter Mezger and the development of radio astronomy in the US and Germany, and the discovery of radio recombination lines.

Pacheco Rojas, José de la Cruz. Los cometas vistos por los indios Tepehuanes. Siglo XVI. In Historia de la religión en Mesoamérica y áreas afines. II coloquio. Barbro Dahlgren (editora). México, Universidad Nacional Autónoma de México, 1990. p. 191–195.

Pafenberg, Stephanie B. Zwischen Teleologie und Kopernikanismus: zur Deutung von fremden Phänomenen in Augsburger Chroniken um 1500. In Hinter dem schwarzen Vorhang; die Katastrophe und die epische Tradition. Festschrift für Anthony W. Riley. Hrsg. von Friedrich Gaede, Patrick O'Neill, Ulrich Scheck. Tübingen, Francke, 1994. p. 35–46.

Paltrinieri, Giovanni. Le meridiane e gli anemoscopi realizzati a Bologna da Egnazio Danti (1536–1586). In Strenna storica bolognese. anno 14; 1994. Bologna, Pàtron editore. p. 365–386. illus., facsimis., plan, port.

Panaino, Antonio. Uranographia Iranica I. The three heavens in the Zoroastrian tradition and the Mesopotamian background. In Au carrefour des religions. Mélanges offerts à Philippe Gignoux. Textes réunis par Rika Gyselen. Publiés avec le concours de l'Institut français de recherche en Iran. Bures-sur-Yvette, Groupe pour l'étude de la civilisation du Moyen Orient, 1995. (Res orientales, 7) p. 205–225.

Panaino, Antonio. Uranographia Iranica II. Avestan hæpta.srū- and merezu-: Ursa Minor and the North Pole? In Archiv für Orientforschung, internationale Zeitschrift für die Wissenschaft vom Vorderen Orient. Bd. 42/43; 1995/96. Wien, Selbstverlag des Instituts für Orientalistik der Universität Wien, 1996. p. 190–207. illus.

Parais, Philippe. Le pendule de Foucault dans les Comptes rendus de l'Académie des sciences de Paris entre 1851 et 1900. In L'Œuvre de deux physiciens: Coulomb (1736–1806), Foucault (1819–1868). Nantes, Université de Nantes, Centre d'histoire des sciences et des techniques, 1994. (Sciences et techniques en perspective, v. 27) p. 96–144. illus.

See also the portrait and the "Notice biographique de Jean Bernard Leon Foucault" on p. 88–89.

Paternoster, G., R. Rinzivillo, and Edvige Schettino. Studio di una lente per cannocchiale di grandi dimensioni lavorata da Evangelista Torricelli. Nuncius, anno 11, fasc. 1, 1996: 123–134. illus.  
English summary.

Pernet, Jacques. Hommage à Camille Flammarion le 2 juin 1996. L'Astronomie, v. 110, sept. 1996: 246. ports.

Pfau, Werner. Nachruf: Siegfried Marx† 1934–1995. In Astronomische Gesellschaft. Mitteilungen. Nr. 79. Hamburg, 1996. p. 5–7. port.

Pillinger, Colin T., and Judith M. Pillinger. The Wold Cottage meteorite: not just any ordinary chondrite. *Meteoritics & planetary science*, v. 31, Sept. 1996: 589–605. illus. (part col.), facsimis. (part col.), map, col. ports.

“The Wold Cottage meteorite, which celebrated its bicentenary on December 13, 1995, occupies a special place in the annals of meteoritics.”

Another color illustration appears on the front cover of the issue.

Pinter, Christian. Kopernikus, Aldebaran und der Mond. *Sterne und Weltraum*, 35. Jahrg., Nr. 11, 1996: 858.

Letter pointing out that a lunar occultation of Aldebaran predicted for Mar. 14, 1997, will occur almost exactly 500 years after the one seen by Copernicus at Bologna on Mar. 9, 1497.

Pounds, Kenneth A. X-ray astronomy. In *X-rays: the first hundred years*. Edited by Alan Michette and Sławka Pfauntsch. Chichester, New York, J. Wiley, 1996. p. 175–192. illus.

Powell, Andrew B. Newgrange—science or symbolizm [sic] In *Prehistoric Society, London. Proceedings*. v. 60; 1994. London. p. 85–96. illus., plans.

“This paper addresses two problems. Firstly, on what (if any) ‘scientific’ principles was Newgrange designed, constructed, and decorated? Secondly, what was the nature and purpose of these principles, and what do they reveal about the structure and dynamics of the society?”

Prokhorov, Aleksandr M. Charles Townes: the scientist and the person. In *Amazing light. A volume dedicated to Charles Hard Townes on his 80th birthday*. Raymond T. Chiao, editor. New York, Springer, 1996. p. 543–547.

Rabenalt, Ansgar. Anselm Desing an H. Probst Franciscus in Polling mit Beschreibung und Plan des Observatoriums zu Kremsmünster worin die Geschichte desselben angegeben. Studien und Mitteilungen zur Geschichte des Benediktiner-Ordens und seiner Zweige, Bd. 101, Heft 1/2, 1990: 103–120.

Rang, Hans. Tycho på Ven: det stora Marsåret 1582–3. *Astronomisk tidsskrift*, årg. 29, juni 1996: 8–12. illus.

“Här lades den observationella grunden till Keplers lagar.”

Ratkowska, Paulina. Signum Leonis, Signum Arietis relief z Tuluzy—dzieło sztuki na szlaku pielgrzymkowym do Composteli. In *Seminarium Mediewistycznego, 13th, Poznań, 1992. Pielgrzymki w kulturze średniowiecznej Europy. Materiały XIII Seminarium Mediewistycznego. Pod redakcją Jacka Wiesiołowskiego. Poznań, PTPN, 1993. (Poznańskie Towarzystwo Przyjaciół Nauk. Sprawozdania Wydziału Nauk o Sztuce, nr. 110 za rok 1992)* p. 127–140. illus.

Compares the iconography of these sculptures to the signs of the zodiac on the facade of the church of Santiago de Compostela.

Reed, B. Cameron. The LS stars at 25 years. *Vistas in astronomy*, v. 40, pt. 2, 1996: 317–341. illus.

“This paper presents a silver-anniversary review of the Stephenson-Sanduleak ‘LS’ stars.”

Reed, George. Final resting places. *Griffith observer*, v. 60, Oct. 1996: 2–11, 14–18. illus.

About the tombs of some famous astronomers.

Renault, Stéphanie. Les fausses pistes du Meteor Crater. *Ciel et espace*, no 317, oct. 1996: 74–78. illus. (part col.), col. maps, col. ports.

Includes a box, “De la Terre à la Lune” (p. 78).

Rendtel, Jürgen, and Wilfried Schröder. 100 Jahre Höhenbestimmungen der leuchtenden Nachtwolken. *Die Sterne*, Bd. 72, Heft 5, 1996: 255–263. illus.

A color illustration appears on the front cover of the issue.

Richman, Sam. Resolving discordant results: modern solar oblateness experiments. *Studies in history and philosophy of modern physics*, v. 27B, Mar. 1996: 1–22. illus.

Rodríguez, Martha E. Enfermedades, astros y matemáticas en la Nueva España. *Ciencia y desarrollo*, v. 20, julio/ag. de 1994: 74–79. col. illus.

“Para los médicos novohispanos el conocimiento de la astrología y de las matemáticas fue muy importante. En la Nueva España la necesidad de estudiar estas disciplinas se hizo presente en el siglo XVII, aunque en el viejo mundo la relación entre la medicina, la astrología y las matemáticas se apreció desde los tiempos hipocraticos.”

Rodríguez-Sala, María Luisa. La observación del eclipse de luna del 17 de noviembre de 1584. *Ciencia y desarrollo*, v. 22, mayo/jun. de 1996: 66–75. col. illus., col. facsims.

“Un documento inédito para la historia de la ciencia en México” held by the Archivo General de Indias. The text of the document is transcribed.

Ruggles, Clive L. N. Summary of the RAS specialist discussion meeting on current issues in archaeo-astronomy. *Observatory*, v. 116, Oct. 1996: 278–285.

Russell, G. A. Aydin Sayili, 1913–1993. *Isis*, v. 87, Dec. 1996: 672–675. port.

Sabra, Abdelhamid I. On seeing the stars. II. Ibn al-Haytham’s “answers” to the “doubts” raised by Ibn Ma’dān. In *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften*. Bd. 10; 1995/96. Frankfurt am Main, Institut für Geschichte der Arabisch-Islamischen Wissenschaften an der Johann Wolfgang Goethe-Universität, 1996. p. 1–59. illus.

Includes Arabic text followed by English translation.

Sabra, Abdelhamid I. Situating Arabic science: locality versus essence. *Isis*, v. 87, Dec. 1996: 654–670. illus.

Salman, Jeroen. Sleutel der prognostikatien. Beeldspraak in astrologische jaarvoorspellingen uit de zeventiende eeuw. De Zeventiende eeuw, jaarg. 11, nr. 1, 1995: 103–114. facsims.

Santo, Paolo del, and Giorgio Strano. Observational evidence and the evolution of Ptolemy’s lunar model. *Nuncius*, anno 11, fasc. 1, 1996: 93–122. illus.

Translated from the Italian by Michael J. Gorman.

Sarma, Sreeramula Rajeswara. Indian astronomical and time-measuring instruments: a catalogue in preparation. *Indian journal of history of science*, v. 29, Oct./Dec. 1994: 507–528. illus.

Sayılı, Aydın. Al-Khwârazmî, 'Abdu'l-Ḥamîd ibn Türk and the place of Central Asia in the history of science and culture. Erdem, cilt 7, Ocak 1991: 1–100.

Includes discussion of arithmetic, algebra, cartography, and astronomy.

Scarcia, Riccardo. Manilio “operatore di poesia.” *Giornale italiano di filologia*, 47, 15 magg. 1995: 53–75.

Scarcia, Riccardo. Manilius gypsatus? *Giornale italiano di filologia*, 47, 15 nov. 1995: 201–218.

Schatzman, Evry. The desire to understand the world. In *Annual review of astronomy and astrophysics*. v. 34; 1996. Palo Alto, Calif., Annual Reviews. p. 1–34. port.  
The portrait faces p. 1.

Schatzman, Evry. Nicole Bel. *Journal des astronomes français*, no 49, nov. 1995: 3–4.

Schmidt, Hans. The visual magnitudes of stars in the Almagest of Ptolemeus and in later catalogues. *Astronomy and astrophysics supplement series*, v. 106, Sept. 1994: 581–585. illus.

Scholten, Alex. De komeet van 1664 op een Amsterdamse pamfletten-serie. *Gewina*, jaarg. 19, nr. 3, 1996: 167–173. illus., facsims.

A version entitled “De komeet van 1664 op Amsterdamse pamfletten-serie” was published in *Zenit*, 23. jaarg., nov. 1996, p. 455–460.

Schweighauser, Charles A. “Know thyself ... study nature.” The contemporary scientist’s dilemma. In *The Delegated intellect; Emersonian essays on literature, science, and art in honor of Don Gifford*. Edited by Donald E. Morse. New York, P. Lang, 1995. (American university studies. Series XXIV, American literature, v. 57) p. 109–124.

“This essay will analyze astronomy, and to a lesser degree physics, not only because Emerson pointedly mentions the astronomer, but also because the astronomy-physics paradigm has shaped our thinking about what science should be and how it should conduct itself.”

Seitter, Waltraut C., Albert Bruch, and Hans Oleak. Hans Strassl 10.1.1907–8.7.1996. *Die Sterne*, Bd. 72, Heft 5, 1996: 249–252. port.

Shoemaker, Carolyn S. Twelve years on the Palomar 18-inch Schmidt. In *Royal Astronomical Society of Canada. Journal*, v. 90, Feb. 1996: 18–41. illus., group port.

Sidelko, Paul L. The condemnation of Roger Bacon. *Journal of medieval history*, v. 22, Mar. 1996: 69–81.

“There is ample evidence to suggest ... that Bacon’s condemnation and imprisonment resulted from his adherence to an astrological tradition, transmitted to Europe through the writings of Albumasar, which placed the birth of Christ and the advent of Christianity under the influence of a planetary conjunction of Jupiter and Saturn.”

Singer, Georg. Weltbilder entstehen im Kopf. Einsteins Reaktion auf die Fortentwicklung der relativistischen Kosmologie, 1917–1931. *Die Sterne*, Bd. 72, Heft 4–5, 1996: 223–240, 289–294. facsims., port.

Sinisgalli, Rocco, and Salvatore Vastola. Desargues e la gnomonica. In *Actes du colloque “Girard Desargues,” Paris-Lyon*. Nantes, Université de Nantes, Centre François Viète, Histoire des sciences et des techniques, 1994. (Sciences et techniques en perspective, v. 29/30) p. 340–346. illus.

Speiser, David. The Kepler problem from Newton to Johann Bernoulli. *Archive for history of exact sciences*, v. 50, no. 2, 1996: 103–116.

Steel, Duncan. The death of the dinosaurs and protection of humankind from asteroid impacts: the first suggestion? *Australian journal of astronomy*, v. 6, Nov. 1995: 87–90.

“The hypothesis that the dinosaurs were extinguished by an asteroid or comet impact is not a new one.”

Stephenson, Bruce. American instruments at the Adler. *Rittenhouse*, v. 10, May 1996: 81–89. illus.

Talbot, Stuart. Jesse Ramsden F.R.S.: his optical testament. *Bulletin of the Scientific Instrument Society*, no. 50, Sept. 1996: 27–29. facsims., port.

Taylor, R. J. E. A. Milne (1896–1950) and the structure of stellar atmospheres and stellar interiors. In *Royal Astronomical Society. Quarterly journal*, v. 37, Sept. 1996: 355–363. port.

Thiele, Rüdiger. Breves in sphaeram meditatiunculae. Die Vorlesungsausarbeitung des Bartholomäus Mercator im Spiegel der zeitgenössischen Kosmographischen Literatur. In *Gerhard Mercator und die geistigen Strömungen des 16. und 17. Jahrhunderts*. [Hrsg. von] Hans H. Blotevogel, Rienk Vermij. Bochum, Universitätsverlag Dr. N. Brockmeyer, 1995. (Duisburger Mercator-Studien, Bd. 3) p. 147–174. facsims.

Tihon, Anne. L'astronomie byzantine à l'aube de la Renaissance (de 1352 à la fin du XV<sup>e</sup> siècle). *Byzantion*, t. 66, fasc. 1, 1996: 244–280.

Toomre, Alar. Some historical remarks on Bertil Lindblad's work on galactic dynamics. In *Nobel Symposium, 98th, Saltsjöbaden, 1995. Barred galaxies and circumnuclear activity. Proceedings of the Nobel Symposium 98, held at Stockholm Observatory, Saltsjöbaden, Sweden, 30 November-3 December 1995*. Berlin, New York, Springer, 1996. (Lecture notes in physics, 474) p. 1–5.

Trachet, Tim. En toch beweegt ze! De discussie over de beweging van de aarde. *Zenit*, 23. jaarg., okt. 1996: 409–413. illus., facsimis., ports.

Trimble, Virginia. Looking backward, darkly. In *Dark matter*. College Park, MD October, 1994. Editor: Stephen S. Holt, Charles L. Bennett. New York, American Institute of Physics, 1995. (AIP conference proceedings, 336) p. 57–68.

“Dark matter, both as a concept and as a name, has a surprisingly long history. We here trace its story from 19th century origins in the Newtonian two- and three-body problems through early 20th century applications of velocity dispersions of stars and galaxies to the first considerations of the most promising modern candidates.”

Turner, Anthony J. Horology, precision technology and the scientific revolution. *Bulletin of the Scientific Instrument Society*, no. 50, Sept. 1996: 15–18. illus. (part col.)

See also the box on p. 29, “Heavenly Clockwork.”

Turner, Gerard L'E. Gerard Mercator as instrument maker. In *Gerhard Mercator und die geistige Strömungen des 16. und 17. Jahrhunderts*. [Hrsg. von] Hans H. Blotevogel, Rienk Vermij. Bochum, Universitätsverlag Dr. N. Brockmeyer, 1995. (Duisburger Mercator-Studien, Bd. 3) p. 131–145. illus.

Usher, Peter D. Shakespeare's cosmic world view. *Mercury*, v. 26, Jan./Feb. 1997: 20–23. ports.

“Most scholars have paid little attention to the Bard's astronomy.”

Vaiškūnas, Jonas, and Saulius Lovčikas. Archeoastronomija, etnoastronomija: pradžia. [Archaeoastronomy, ethnoastronomy: beginning] *Liaudies kultūra*, nr. 1, 1996: 1–6. illus.

The authors were interviewed by Dalia Rastenienė upon their return from a conference on these topics held in Romania.

Van Albada-van Dien, Elsa. The Bosscha Observatory Schmidt telescope. In *IAU Colloquium, 148th, Bandung, Indonesia, 1994. The future utilisation of Schmidt telescopes*. IAU Colloquium 148 held 7–11 March 1994 in Bandung, Indonesia. Edited by Jessica Chapman, Russell Cannon, Sandra Harrison, and Bambang Hidayat. San Francisco, Astronomical Society of the Pacific, 1995. (Astronomical Society of the Pacific conference series, v. 84) p. 15–18.

Van Helden, Albert. Galileo and Scheiner on sunspots: a case study in the visual language of astronomy. In *American Philosophical Society, Philadelphia. Proceedings*, v. 140, Sept. 1996: 358–396. facsimis.

Varisco, Daniel M. The magical significance of the lunar stations in the 13<sup>th</sup> century Yemeni *Kitāb al-Tabsira fī ilm al-nujūm* of al-Malik al-Ashraf. In *Quaderni di studi arabi*. 13; 1995. Roma, Herder editrice. p. 19–40.

Verbiest: scientist. In Ferdinand Verbiest (1623–1688), Jesuit missionary, scientist, engineer and diplomat. Edited by John W. Witek. Nettetal, Steyler Verlag, 1994. (Monumenta serica monograph series, 30) p. 45–211. illus., facsimis.

“Jointly published by Institut Monumenta Serica, Sankt Augustin, and Ferdinand Verbiest Foundation, Leuven.”

Partial contents: Blondeau, R. A. Did the Jesuits and Ferdinand Verbiest import outdated science into China?—Libbrecht, U. General evaluation of the scientific work of Ferdinand

Verbiest.—Golvers, N. Ferdinand Verbiest on European astronomy in China: from the *Compendia* to the *Astronomia Europaea* (1687); a historical philological analysis.—Halsberghe, N. The resemblances and differences of the construction of Ferdinand Verbiest's astronomical instruments, as compared with those of Tycho Brahe; a study based on their writings.—Iannaccone, I. Syncretism between European and Chinese culture in the astronomical instruments of Ferdinand Verbiest in the old Beijing observatory.—Yi, S. The Kangxi celestial globe: a milestone in the history of Sino-Western cultural exchange.—Xi, Z. Ferdinand Verbiest's contributions to Chinese science.

Verheest, Frank. Un grand nom de l'évolution stellaire: Subrahmanyam Chandrasekhar (1910–1995). *Ciel et terre*, v. 112, mai/juin 1996: 117–119. port.

First published in *Heelal*, nov. 1995, p. 288–290; French translation by Louis Brabant.

Verheyden, Ivan. Enseignements récoltés dans les *henges* des îles britanniques. *Kadath*, 85, automne/hiver 1995: 26–41. illus., maps, plans.

Describes investigations of alignments and orientations suggesting the use of these structures to keep track of cyclical changes in the rising and setting points of the sun and moon.

Véricourt, Guillemette de. Sur les pas de Tycho. *Ciel et espace*, no 315, juil./août 1996: 76–79. col. illus., col. map, col. ports.

On an exhibition held Apr. 12–Sept. 15, 1996, commemorating the 450th anniversary of Tycho's birth.

Verlet, Loup. 'F=ma' and the Newtonian revolution: an exit from religion through religion. *History of science*, v. 34, Sept. 1996: 303–346.

Vesel, Živa. Le *Lavâ'eh al-Qamar*, un traité d'astrologie de Ḥoseyn Vâ'ez Kâšefi. In European Conference of Iranian Studies, 2d, Bamberg, 1991. Proceedings of the second European Conference of Iranian Studies, held in Bamberg, 30th September to 4th October 1991, by the Societas Iranologica Europaea. Edited by Bert G. Fragner, Christa Fragner, Gherardo Gnoli, Roxane Haag-Higuchi, Mauro Maggi and Paola Orsatti. Roma, Istituto italiano per il Medio ed Estremo Oriente, 1995. (Serie orientale Roma, v. 73) p. 711–718.

Vicente García, Luis M. La actitud de Alfonso X hacia la astrología. In Proyección histórica de España en sus tres culturas: Castilla y León, América y el Mediterráneo. Eufemio Lorenzo Sanz (coordinador). 1. Historia e historia de América. Valladolid, Junta de Castilla y León, Consejería de Cultura y Turismo, 1993. p. 379–385.

Viktor Ambartsumian 1908–96. Physics world, v. 9, Oct. 1996: 54. port.

Vilain, Christiane. Genèse d'une idée: l'expansion de l'univers. *La Recherche*, no 284, fév. 1996: 104–107. col. illus., ports.

Includes a box, "Que veut dire 'mesurer' en cosmologie?" (p. 106).

Viñas i Vallverdú, Ramón, and Armando Nicolau. Astronomía y arte ruprestre [sic] en México. *Ciencia y desarrollo*, v. 17, sept./oct. 1991: 113–119. illus. (part col.)

Viotti, Roberto. A historical overview of the  $\eta$  Carinae problem. *Revista mexicana de astronomía y astrofísica*, serie de conferencias, v. 2, jun. 1995: 1–10. illus.

Von Plato, Jan. Illustrations of method in Ptolemaic astronomy. In Investigating Hintikka. Edited by Rudolf Haller. Amsterdam, Rodopi, 1995. (Grazer philosophische Studien, v. 49, 1994/95) p. 63–75. illus.

Wallace, Philip R. The quantum stellar interferometer of Hanbury Brown. In his Paradox lost: images of the quantum. New York, Springer, 1996. p. 74–76. illus.

- Wallis, Faith. The Church, the world and the time: prolegomena to a history of the medieval *computus*. In Colloque "La recherche en études médiévales au Québec et en Ontario," *Montreal, 1989*. Normes et pouvoir à la fin du moyen âge. Actes du colloque "La recherche en études médiévales au Québec et en Ontario," 16–17 mai, 1989, Montréal. Publié par Marie-Claude Déprez-Masson. Montréal, Éditions CERES, 1989. p. 15–29.
- Weidemann, Volker. Albrecht Unsöld (1905–1995). In *Astronomical Society of the Pacific. Publications*, v. 108, July 1996: 553–555. ports.
- Weiss, Carina. Virgo, Capricorn und Taurus: zur Deutung augusteischer Symbolgemmen. In *Deutsches Archäologisches Institut. Jahrbuch*. Bd. 109; 1994. Berlin, W. de Gruyter. p. 353–369. illus.
- Wenzel, Wolfgang. Woldemar Götz 4.4.1930–31.8.1996. *Die Sterne*, Bd. 72, Heft 6, 1996: 311–312. port.
- Whitrow, Gerald J. E. A. Milne and cosmology. In *Royal Astronomical Society. Quarterly journal*, v. 37, Sept. 1996: 365–367.
- Wilk, Stephen R. Mythological evidence for ancient observations of variable stars. In *American Association of Variable Star Observers. Journal*, v. 24, no. 2, 1996: 129–133. illus.
- Willach, Rolf. New light on the invention of the achromatic telescope objective. In *Royal Society of London. Notes and records*, v. 50, July 1996: 195–210. illus.
- Willis, D. M., V. N. Davda, and F. Richard Stephenson. Comparison between oriental and occidental sunspot observations. In *Royal Astronomical Society. Quarterly journal*, v. 37, June 1996: 189–229. illus.  
"The reliability of sunspot sightings recorded in various Oriental histories is assessed by comparing carefully the Oriental sunspot sightings from 1862 onwards with contemporaneous Occidental white-light images of the sun acquired by the Royal Greenwich Observatory."
- Willmoth, Frances. The Royal Society and the Royal Observatory. In *her Sir Jonas Moore: practical mathematics and Restoration science*. Woodbridge, Suffolk, Boydell Press, 1993. p. 158–195. facsimis.
- Wolfendale, Sir Arnold W. Jerzy Wdowczyk 1935–96. *Physics world*, v. 9, Nov. 1996: 55. port.
- Wolfschmidt, Gudrun. All-Wissen: Tycho Brahe's Sternwarte Uraniborg. *Kultur & Technik*, 20. Jahrg., Nr. 4, 1996: 12–13. illus.  
On the model of Tycho's observatory displayed in the Deutsches Museum.
- Yau, Kevin K. C. Comets, now and then. *Mercury*, v. 25, Nov./Dec. 1996: 22–25. illus.  
"Comets appear so infrequently and depart so abruptly that astronomers don't have much time to study them in detail with telescopes. Fortunately, researchers have found another source of information on comets: historical accounts from hundreds or thousands of years ago."  
Includes a box, "The Chinese Astronomical System" (p. 25).

R. S. Freitag  
Library of Congress  
February 1997