- Harrington, Philip. The story of Stellafane. Griffith observer, v. 53, June 1989: 2-10. illus.
 - Another illustration appears on the front cover of the issue.
- Hashimoto, Takehiko. Huygens, dioptrics, and the improvement of the telescope. Historia scientiarum, no. 37, June 1989: 51-90. illus., facsims.
- Helfricht, Jürgen. Wilhelm-Tempel-Kolloquium. Astronomie und Raumfahrt, 27. Jahrg., Heft 3, 1989: 91.
- Helfricht, Jürgen. 200 Jahre Seeberg-Sternwarte. Astronomie und Raumfahrt, 27. Jahrg., Heft 3, 1989: 91-92.
- Hendrischke, Barbara. How the Celestial Master proves Heaven reliable. <u>In</u>
 Religion und Philosophie in Ostasien. Festschrift für Hans Steininger zum
 65. Geburtstag. Hrsg. von Gert Naundorf, Karl-Heinz Pohl, Hans-Hermann
 Schmidt. Würzburg, Königshausen + Neumann, 1985. p. 77-88.
 - Examines ideas expressed in the T'ai-p'ing ching, a Taoist scripture presumed to date from the end of the Han Dynasty. Among these is the notion that any disturbance in the heavens, such as an eclipse of the sun or moon, results from human misbehavior.
- Herries Davies, Gordon L. Astronomy, geology, meteorology. <u>In</u> The Royal Irish Academy; a bicentennial history, 1785-1985. With a foreword by W. A. Watts. General editor: T. Ó. Raifeartaigh. Dublin, Royal Irish Academy, 1985. p. 247-273. illus.
- Herrmann, Dieter B. Planetarium openings [1923-87]—a statistical analysis. Jena review, v. 34, no. 2, 1989: 92-95. illus.
- Hetherington, Norriss S. Geological time versus astronomical time: are scientific theories falsifiable? Earth sciences history, v. 8, no. 2, 1989: 167-169.
- Higgins, Anne. Medieval notions of the structure of time. Journal of medieval and renaissance studies, v. 19, fall 1989: 227-250.

 Includes discussion of calendars and chronology.
- Hon, Giora. Is there a concept of experimental error in Greek astronomy?

 British journal for the history of science, v. 22, July 1989: 129-150.
 illus.
- Hoskin, Michael A. Newton and the beginnings of stellar astronomy. <u>In</u> Newton and the new direction in science. Proceedings of the Cracow conference, 25 to 28 May 1987. Edited by G. V. Coyne, M. Heller, and J. Życiński. Città del Vaticano, Specola Vaticana, 1988. p. 55-63.
- Hoskin, Michael A. William Herschel and the construction of the heavens. <u>In</u>
 American Philosophical Society, <u>Philadelphia</u>. Proceedings, v. 133, Sept. 1989: 427-433.
- Hovenier, J. W. Zeventig jaar NAC [Nederlandse Astronomieclub] Zenit, 16. jaarg., feb. 1989: 59. port.
- Hübner, Wolfgang. Das Sternbild Lychnos. <u>In</u> Lychnos; Lärdomshistoriska samfundets årsbok. 1987. Stockholm, Almqvist & Wiksell International, 1988. p. 1-13. illus.

 English summary: p. 10.
- Hughes, David W. Hipparchus's spring and summer and the ellipticity of the earth's orbit. <u>In</u> British Astronomical Association, <u>London</u>. Journal, v. 99, Apr. 1989: 90-94. illus.
- Hughes, David W. Meteor myths. Astronomy now, v. 3, Nov. 1989: 43-46. illus.

- Hunger, Hermann. A 3456: eine Sammlung von Merkurbeobachtungen. In A Scientific humanist; studies in memory of Abraham Sachs. Edited by Erle Leichty, Maria deJ. Ellis, and Pamela Gerardi. Philadelphia, 1988. (Occasional publications of the Samuel Noah Kramer Fund, 9) p. 201-223.

 Includes transliteration and translation of a tablet from Uruk recording observations made during the years 116-132 of the Seleucid era.
- Hustache, Etienne. Le monde vu de Lyon en 1456: la cosmographie de Louis de Langle. <u>In</u> Congrès national des sociétés savantes, <u>112th</u>, Lyon, <u>1987</u>. Actes. Section d'Histoire des sciences et des techniques. t. l. Lyon, cité de savants. Paris, Editions du C.T.H.S., 1988. p. 9-15.
- Hyland, A. R. Harry, and Donald J. Faulkner. From the sun to the universe--the Woolley and Bok directorships at Mount Stromlo. In Astronomical Society of Australia. Proceedings, v. 8, no. 2, 1989: 216-228. illus., group port.
- Ishwar, Bhola. Development of Indian astronomy at the time of Aryabhata I. Ganita-bhāratī, v. 6, no. 1/4, 1984: 19-24.
- Jaakkola, Toivo. The Kaali giant meteorite fall in the Finnish-Estonian folklore. In Soviet-Finnish Astronomical Meeting, 6th, Tallinn, Estonia, 1986. Proceedings. Edited by Uku Hänni [and] Ilkka Tuominen. Tallinn, 1988. (W. Struve nimeline Tartu Astrofüüsika Observatoorium. Teated, nr. 92) p. 203-216.
- Jaquel, Roger. L'astronome bressan et parisien Joseph Jérôme de Lalande (1732-1807) et l'astronome bâlois et berlinois Jean III Bernoulli (1744-1807). Leur correspondance inedite (et presque inconnue) dans les Archives de la Bibliothèque universitaire de Bâle. In Congrès national des sociétés savantes, 112th, Lyon, 1987. Actes. Section d'Histoire des sciences et des techniques. t. l. Lyon, cité de savants. Paris, Editions du C.T.H.S., 1988. p. 87-101. ports.
- Jõeveer, M. Observations of supernova 1885a at Tartu Observatory. <u>In Soviet-Finnish Astronomical Meeting, 6th, Tallinn, Estonia, 1986</u>. Proceedings. Edited by Uku Hänni [and] Ilkka Tuominen. Tallinn, 1988. (W. Struve nimeline Tartu Astrofüüsika Observatoorium. Teated, nr. 92) p. 159-162.
- Johnson, Peter. The Board of Longitude 1714-1828. In British Astronomical Association, London. Journal, v. 99, Apr. 1989: 63-69. illus., port.
- Jones, Simon. The astronomical manuscripts of Nasir al-Din Tusi. Manuscripts, v. 41. winter 1989: 33-40. illus.
- Kákosy, László. Solar disk or solar globe? <u>In</u> Studien zu Sprache und Religion Ägyptens. Zu Ehren von Wolfhart Westendorf überreicht von seinen Freunden und Schülern. Bd. 2. Religion. Göttingen, F. Junge, 1984. p. 1057-1067. plates.
 - "We shall try to find out whether ideas concerning the shape of the Sun as a heavenly body remained unchanged throughout the history of ancient Egypt or there can be traced opinions divergent from the more commonly accepted view."
- Karmohapatro, S. B. Meghnad Saha and the theory of thermal ionisation. Science & culture, v. 53, June 1987: 163-164.
- Kennedy, Edward S., and Jan Hogendijk. Two tables from an Arabic astronomic handbook for the Mongol viceroy of Tibet. In A Scientific humanist studies in memory of Abraham Sachs. Edited by Erle Leichty, Maric J. Ellis, and Pamela Gerardi. Philadelphia, 1988. (Occasional processions)

- of the Samuel Noah Kramer Fund, 9) p. 233-242. illus.
 A parallax table and a lunar visibility table from a 14th-century zīj
 in the Bibliothèque nationale, Paris.
- Kerszberg, Pierre. The Einstein-de Sitter controversy of 1916-1917 and the rise of relativistic cosmology. In Einstein and the history of general relativity. Based on the proceedings of the 1986 Osgood Hill Conference, North Andover, Massachusetts, 8-11 May 1986. Don Howard, John Stachel, editors. Boston, Birkhäuser, 1989. (Einstein studies, v. 1) p. 325-366.
- Kevles, Bettyann. A pioneer of planetary science. Planetary report, v. 9, May/June 1989: 18-21. illus. (part col.), port. About Gerard P. Kuiper.
- King, David A. Astronomy for landlubbers and navigators: the case of the Islamic Middle Ages. In Coimbra. Universidade. Revista. v. 32; 1985. Coimbra. p. 211-223. 11lus., facsims.
- Klottrup, Alan C. '... Astrorum acerrimus indagator ...' Temple Chevallier and Durham 1834-1873. Durham University journal, new ser., v. 47, Dec. 1985: 11-21.

Chevallier served the university as its first and last professor of mathematics and astronomy.

- Kochbar, R. K. The Shelton clock at Kodaikanal. Antiquarian horology, v. 17, winter 1987: 181-184. illus.
- Koge, Siegfried. Johann Georg Palitzsch und die Entdeckung des Halleyschen Kömeten 1758. In Geschichte der Kometenforschung. Berlin-Treptow, 1987.
 (Archenhold-Sternwarte, Berlin-Treptow. Vorträge und Schriften, Nr. 66)
 p. 29-53. illus., ports.
- Krafft, Fritz. Von der Kosmologie zur Kosmogonie; Zeit als neue Dimension der Kosmologie im 18. Jahrhundert. In Wissenschaftsgeschichte heute. Ansprachen und wissenschaftliche Vorträge zum 25jährigen Bestehen des Instituts für Geschichte der Naturwissenschaften, Mathematik und Technik der Universität Hamburg. Hrsg. von Christian Hünemörder. Stuttgart, F. Steiner Verlag Wiesbaden, 1987. (Beiträge zur Geschichte der Wissenschaft und der Technik, Heft 20) p. 69-85.
- Kragh, Helge. The beginning of the world: Georges Lemaftre and the expanding universe. Centaurus, v. 30, no. 2, 1987: 114-139. illus.
- Kranjc, Aldo. La precessione degli equinozi e la storia. Giornale di astronomia, v. 14, sett. 1988: 31-34.
 On precession as an aid in determining historical dates.
- Kreiner, Jerzy M. Dzieje Obserwatorium Meteorologiczno-Astronomicznego na Popie Iwanie. Urania (Kraków), r. 60, kwiec. 1989: 98-108. illus. The illustrations appear on both sides of the front and back covers of the issue.
- Kren, Claudia. The medieval man in the moon. <u>In</u> Mediaevalia, a journal of medieval studies. v. 7; 1981. Binghamton, Center for Medieval and Early Renaissance Studies of the State University of New York at Binghamton, 1984. p. 221-238. illus.

"The availability of the moon's surface to our gaze and the stability of the man-in-the-moon configuration provided a focus for discussion and speculation in the late Middle Ages in which traditional folklore as well as received astronomical authority played a part."

- Kučinskas, Arūnas. Astronomy in Lithuania. <u>In</u> British Astronomical Association, <u>London</u>. Journal, v. 99, Oct. 1989: 233-236. illus., ports.

 "The history of astronomy in Lithuania is described briefly, including both professional and amateur work. The article marks the 235th anniversary of Vilnius Observatory."
- Kurtik, G. E. Nablſudenie i ego interpretaſsiſa v astrologii i astronomii drevneĭ Mesopotamii. Voprosy istorii estestvoznaniſa i tekhniki, no. 1, 1989: 36-47. English summary: p. 47.
- Lacroux, Jean. Napoléon, ami des astronomes. Ciel et espace, no 221, jan. 1988: 50-53. illus. (part col.)
- Lacroux, Jean. Les 7 axiomes de Copernic qui ébranlèrent l'astronomie ancienne. Ciel et espace, no 230, nov. 1988: 58-61. col. illus., col. port.
- Lanciano, Nicoletta. Antinoo, storia di una costellazione. Astronomia, anno 11, febbr. 1989: 22-29. illus. (part col.)
- Lekeby, Kjell. Till frågan om drottning Kristinas konstitution och äktenskapsvägran; ett astrologisk-medicinskt manuskript från 1650-talet. <u>In</u> Lychnos; Lärdomshistoriska samfundets årsbok. 1987. Stockholm, Almqvist & Wiksell International, 1988. p. 27-35. illus. French summary: p. 33.
- Leo, Amilcare de, <u>and</u> Domenico Filippone. Padre Redento, un Barnabita copernicano. Astronomia, anno 11, apr. 1989: 20-27. illus.

 About Giovanni Antonio Baranzano, a contemporary of Galileo who taught the new astronomical ideas at the Collegio dei Chierici Regolari di S. Paolo in Upper Savoy. He too was forced to recant.
- Lerner, Michel P. Le problème de la matière céleste après 1550: aspects de la bataille des cieux fluides. Revue d'histoire des sciences, t. 42, juil./ sept. 1989: 255-280. English summary.

On "certain aspects of the overthrow of the notion of 'solid' celestial spheres which were still an integral part of the representation of the cosmos in the mid-16th century."

- Lértora Mendoza, Celina A. El "Ars inveniendi eclipsim solis et lunae" copiado por Roberto Grosseteste. Mathesis, v. 5, agosto de 1989: 371-394. facsim. An introduction, with bibliographic footnotes, is followed by the Latin text and Spanish translation.
- Levi-Donati, Gemma R. Obscuratus est Sol per totam orbem. Astronomia, anno 11, giugno 1989: 24-29. illus. (part col.)

 About the total solar eclipses visible in Italy on June 3, 1239, and Feb. 12, 1431.
- Lille, Wolfgang, and Matthias Hünsch. 25 Jahre Gesellschaft für volkstümliche Astronomie e.V., Hamburg. Sterne und Weltraum, 28. Jahrg., Mai 1989: 326-327. illus.
- Lingenfelter, Richard E. Gamma ray astronomy, a historical perspective. In Nuclear spectroscopy of astrophysical sources. Washington, D.C. 1987. Editors: Neil Gehrels, Gerald H. Share. New York, American Institute of Physics, 1988. (AIP conference proceedings, 170) p. 17-23.
- Lisnevskiĭ, fŪ. I. Georgiĭ Antonovich Gamov: zhizn' v Rossii i SSSR. Voprosy istorii estestvoznaniſa i tekhniki, no. 1, 1989: 48-55; no. 2: 97-107. ports.

- Logsdon, John M. Missing Halley's Comet: the politics of big science. Isis, v. 80, June 1989: 254-280. illus.
- Long, Charlotte R. The gods of the months in ancient art. American journal of archaeology, v. 93, Oct. 1989: 589-595. illus.
- Luft, Ulrich. Der Tagesbeginn in Ägypten. Altorientalische Forschungen, Bd. 14, Heft 1, 1987: 3-11.
- Lugg, Andrew. History, discovery and induction: Whewell on Kepler on the orbit of Mars. In An Intimate relation; studies in the history and philosophy of science presented to Robert E. Butts on his 60th birthday. Edited by James Robert Brown and Jürgen Mittelstrass. Dordrecht, Boston, Kluwer Academic Publishers, 1989. (Boston studies in the philosophy of science, v. 116) p. 283-298.
- Lukas, Rainer. Die mittelalterliche Darstellung von Sonnenfinsternissen. Sterne und Weltraum, 28. Jahrg., März 1989: 184-185. facsims.
- Lupato, Giovanni. L'eclisse di Filostorgio. Astronomia, anno 10, luglio 1988: 16-21. col. illus., facsims.

 On the only account of the total solar eclipse of 418 B.C. that was visible in Rome and Byzantium.
- Maclean, A. Lunar eclipse of 1675. <u>In</u> British Astronomical Association, <u>London</u>. Journal, v. 99, Aug. 1989: 164.
- Maddison, Ron. Edwin Hubble and the idea of an expanding universe. Astronomy now, v. 3, Aug. 1989: 43-47. illus.
- Magaña, Edmundo. Astronomía wayana y tarëno (Guyana Francesa, Surinam, norte de Brasil). América indígena, v. 48, abr./jun. 1988: 447-461. illus. Summary in English.
- Malherbe, Jean M. L'extraordinaire épopée des observatoires du Mont Blanc. Ciel et espace, no 229, oct. 1988: 56-59. illus.
- Marcialis, Robert L. The discovery of Charon: happy accident or timely find?

 In British Astronomical Association, London. Journal, v. 99, Feb. 1989: 27-29. illus.
- Maria, M. de, and A. Russo. Cosmic ray romancing: the discovery of the latitude effect and the Compton-Millikan controversy. Historical studies in the physical and biological sciences, v. 19, pt. 2, 1989: 211-266. illus., maps, ports.
- Markkanen, Tapio. Astronomy around the Baltic Sea in the 18th and 19th centuries. In Soviet-Finnish Astronomical Meeting, 6th, Tallinn, Estonia, 1986. Proceedings. Edited by Uku Hänni [and] Ilkka Tuominen. Tallinn, 1988. (W. Struve nimeline Tartu Astrofüüsika Observatoorium. Teated, nr. 92) p. 217-222.
- Marquet, Louis. De Dunkerque à Barcelone: par monts et par vaux le long d'un méridien (1792-1798). L'Astronomie, v. 103, juin 1989: 259-267. illus., ports.
- Marquet, Louis. 24 heures ou 10 heures? Un essai de division décimale du jour. L'Astronomie, v. 103, juin 1989: 285-290. illus., port.
- Marshack, Alexander. On wishful thinking and lunar "calendars." Current anthropology, v. 30, Aug./Oct. 1989: 491-500. illus.
- Matuan, Moctar. Kapamitoon: Maranao astrology and farming activities. Dansalan quarterly, v. 5, Jan. 1984: 92-98. port.

- Meij, T. van der. Astronomisch bepaalde oriëntaties? Zenit, 15. jaarg., nov. 1988: 384-385. illus., plans.
- Meyer, Eric. Galileo's cosmogonical calculations. Isis, v. 80, Sept. 1989: 456-468. illus.
- Monaco, Giuseppe. Sulle prime livelle a cannocchiale. Rivista di storia della scienza, v. 3, nov. 1986: 385-407. illus.
- Morando, Bruno, Patrick Rocher, <u>and</u> Denis Savoie. Le calendrier républicaine. L'Astronomie, v. 103, juin 1989: 269-275. illus., port.
- Morando, Bruno. Une création de la Convention: le Bureau des longitudes. L'Astronomie, v. 103, juin 1989: 299-306. ports.
- Morton-Gledhill, Rowan I. The architecture of astronomy in the British Isles: a general study. Vistas in astronomy, v. 32, pt. 3, 1988: 235-283. plates.
- Neckel, Heinz. Pennäler-Astronomie in verrückter Zeit. Sterne und Weltraum, 28. Jahrg., Mai 1989: 296-303. illus.

Reminiscences of his pursuit of astronomy as a schoolboy in northern Germany during the years immediately following the Second World War.

- Neugebauer, Otto. A Babylonian lunar ephemeris from Roman Egypt. In A Scientific humanist; studies in memory of Abraham Sachs. Edited by Erle Leichty, Maria deJ. Ellis, and Pamela Gerardi. Philadelphia, 1988. (Occasional publications of the Samuel Noah Kramer Fund, 9) p. 301-304. illus.
- Neugebauer, Otto. From Assyriology to Renaissance art. <u>In</u> American Philosophical Society, <u>Philadelphia</u>. Proceedings, v. 133, Sept. 1989: 391-403. illus.
 - "... an important parameter of Babylonian lunar theory remained in perpetual use into the calendrical structure of Renaissance works of art."
- Nomblot, Bernard. Antoniadi et la planète Mars. Ciel et espace, no 228, sept. 1988: 50-54. illus.
- Nomblot, Bernard. Laplace: savant, citoyen, comte et marquis. Ciel et espace, no 238, juil./août 1989: 66-69. illus., port.
- Norlander-Unsgaard, Siv. On time-reckoning in old Saami culture. In Symposium on Saami Religion, Turku, Finland, 1984. Saami religion. Based on papers read at the Symposium on Saami Religion held at Åbo, Finland, on the 16th-18th of August 1984. Edited by Tore Ahlbäck. Åbo, Finland, Donner Institute for Research in Religious and Cultural History; Stockholm, Sweden, Distributed by Almqvist & Wiksell International, 1987. (Scripta Instituti Donneriani Aboensis, 12) p. 81-93. illus.
- Okasha, Elisabeth. A sundial from Stow, Lincolnshire. <u>In</u> Medieval archaeology; journal of the Society for Medieval Archaeology. v. 29; 1985. London. p. 146-147. plate.

The plate, no. VIII A, is bound at the end of the volume.
"... it seems to me likely that the newly-found fragment from Stow dates from the 11th or 12th century."

Olmsted, Garrett. The use of ordinal numerals on the Gaulish Coligny calendar. Journal of Indo-European studies, v. 16, fall/winter 1988: 267-339.

- Orchiston, Wayne. Illuminating incidents in antipodean astronomy: Phillip Parker King and the founding of Sydney Observatory. Vistas in astronomy, v. 32, pt. 3, 1988: 285-301. map, plates.
- Parisot, Jean P., and Georges Lambert. Les "années" et la rotation de la terre. Histoire & mesure, v. 1, no 3/4, 1986: 119-145. 11lus.
 English abstract: p. 274.
- Pero, Andrea. I disegni di Nazca. Astronomia, anno 11, genn. 1989: 34-38. illus. (part col.)
- Peterson, Laurence E. Gamma-ray spectroscopy, an historical perspective. In Nuclear spectroscopy of astrophysical sources. Washington, D.C. 1987. Editors: Neil Gehrels, Gerald H. Share. New York, American Institute of Physics, 1988. (AIP conference proceedings, 170) p. 1-16. illus.
- Pingree, David. Astorlāb. <u>In</u> Encyclopaedia Iranica. Edited by Ehsan Yarshater. v. 2. London, New York, Routledge & Kegan Paul, 1987. p. 853-857.
- Pingree, David. Astrology and astronomy in Iran. <u>In</u> Encyclopaedia Iranica. Edited by Ehsan Yarshater. v. 2. London, New York, Routledge & Kegan Paul, 1987. p. 858-871.
 - Contents: 1. History of astronomy in Iran.--2. Astronomy and astrology in the Sasanian period.--3. Astrology in Islamic times.
- Pingree, David, and Christopher B. F. Walker. A Babylonian star-catalogue:
 BM 78161. In A Scientific humanist; studies in memory of Abraham Sachs.
 Edited by Erle Leichty, Maria ded. Ellis, and Pamela Gerardi. Philadelphia, 1988. (Occasional publications of the Samuel Noah Kramer Fund, 9)
 p. 313-322.
 - Includes transliteration, translation, and commentary.
- Pitsch, Helmut. Pyramiden und Sonnenbahn. <u>In</u> Die Welt des Orients; wissenschaftliche Beiträge zur Kunde des Morgenlandes. Bd. 15; 1984. Göttingen, Vandenhoeck & Ruprecht, 1985. p. 19-50. illus.
- Porte, Michèle. Di Dondi avant Galilée? Histoire & mesure, v. 1, no 2, 1986: 29-47.
 - See also the comment by Emmanuel Poulle and Porte's response in v. 2, no 1, 1987, p. 155-157.
- Prestinenza, Luigi. Pionieri della divulgazione. Astronomia, anno 10, magg. 1988: 26-31. illus.
 - About Isidoro Baroni ($\underline{\text{L'Astrofilo}}$), Guido Horn d'Arturo ($\underline{\text{Coelum}}$), and others.
- Prestinenza, Luigi. Vincenzo Cerulli e la sua Collis Uraniae. Astronomia, anno 11, ott. 1989: 24-29. illus. (part col.), ports. (part col.)
- Proverbio, Edoardo. Provisional catalogue of R. J. Boscovich letters. Nuncius, anno 4, fasc. 1, 1989: 93-159.

 English summary: p. 159.
- Puig Aguilar, Roser. Ciencia y técnica en la <u>Ihāta</u> de Ibn al-Jaṭīb, siglos XIII y XIV. <u>In</u> Dynamis. v. 4; 1984. Granada, Universidad de Granada. p. 65-79.

 Astronomers are included.
- Radrizzani, Aldo. Tempel a Brera, astronomo e artista. Astronomia, anno 11, mar. 1989: 24-31. col. illus.

- Randall, A. G. The technology of John Harrison's portable timekeepers. Antiquarian horology, v. 18, summer-autumn 1989: 145-160, 261-277. illus.
- Randi, Eugenio. Talpe ed extraterrestri: un inedito di Agostino Trionfo di Ancona sulla pluralità dei mondi. Rivista di storia della filosofia, nuova ser., anno 44, n. 2, 1989: 311-326. The Latin text is given on p. 324-326.
- Reichstein, Manfred. Keplers Marsmond-Prophezeihungen und ihre Folgen. Die Sterne, 65. Bd., Heft 3, 1989: 145-152.
- Rochberg-Halton, Francesca. Benefic and malefic planets in Babylonian astrology. In A Scientific humanist; studies in memory of Abraham Sachs. Edited by Erle Leichty, Maria deJ. Ellis, and Pamela Gerardi. Philadelphia, 1988. (Occasional publications of the Samuel Noah Kramer Fund, 9) p. 323-328.
- Rohark, Jens. Mitteilungen zur Astronomie des Altertums. Astronomie und Raumfahrt, 27. Jahrg., Heft 3, 1989: 80-81. Contents: 1. Wann begann der Maya-Kalender?--2. Das Platonische Jahr der Sumerer.
- Rohlfs, Kristen. Galactic astronomy in continental Europe in the nineteenth century in the time succeeding Herschel. Vistas in astronomy, v. 32, pt. 3, 1988: 215-223. plates.
- Rohr, René R. J. The universal sundials of Jacques Ozanam. Antiquarian horology, v. 18, summer 1989: 171-177. illus.

 An English translation by A. R. Somerville of an article first published in Centaurus, v. 29, no. 3, 1986; see listing in HAD Newsletter no. 14.
- Roller, Duane W. Columns in stone: Anaximandros' conception of the world.

 In L'Antiquité classique. t. 58; 1989. Bruxelles. p. 185-189.
- Romano, Giuliano. Risultati e programmi delle ricerche archeoastronomiche in Italia. Orione, v. 7, genn./febbr. 1987: 35-37. illus.
- Roseman, Christina H. Hour tables and Thule in Pliny's Natural History. Centaurus, v. 30, no. 2, 1987: 93-105.
- Rüdiger, Günther. Augen-Blicke: aus dem "wahren Leben" des Heinrich Samuel Schwabe. Sterne und Weltraum, 28. Jahrg., Okt. 1989: 570-574. illus., port.
- Russell, John L. Catholic astronomers and the Copernican system after the condemnation of Galileo. Annals of science, v. 46, July 1989: 365-386.
- Rybka, Przemysław. Mój ojciec. Wspomnienie o Profesorze Eugeniuszu Rybce. Urania (Kraków), r. 60, czerw. 1989: 168-178. A photograph of Prof. Rybka is reproduced on the outside front cover of the issue.
- Ryden, Barbara. The earl and the Leviathan. Griffith observer, v. 53, Nov. 1989: 2-11, 14. illus.

 On the third Earl of Rosse and his huge telescope. Another illustration appears on the outside back cover of the issue.
- Samsó, Julio. Algunas notas sobre el modelo solar y la teoría de la precesión de los equinoccios en la obra astronómica de Alfonso X. In Dynamis. v. 4; 1984. Granada, Universidad de Granada. p. 81-114. illus.
- ---- Corrigendum. <u>In</u> Dynamis. v. 5/6; 1985/86. Granada, Universidad de Granada [1987?] p. 427-428.

- Sartor, Mario. Connessioni culturali in area maya: calendario, architetture, urbanistica. Museum Patavinum, anno 3, n. 2, 1985: 401-416. plate.
- Schmeidler, Felix. Über die Realität der von W. Herschel berichteten Beobachtungen der Ringe des Uranus. Centaurus, v. 31, no. 2, 1988: 126-140. illus.
- Schmitz, Peter. Die Visbeker Braut--eine Mondwarte. Sterne und Weltraum, 28. Jahrg., Okt. 1989: 608-610. illus. (part col.)
- Scholz, Gerhard. 100 Jahre photographisch bestimmte Radialgeschwindigkeiten.
 Astronomie und Raumfahrt, 27. Jahrg., Heft 1, 1989: 14-17. port.

 A photograph of the Potsdam Spectrograph is reproduced on the inside front cover of the issue.
- Schreiter, Michael. 25 years: Falkau star atlas. Jena review, v. 34, no. 2, 1989: 98. illus. (part col.)
- Die 'Schrift des Sem': Einführung, Text und Übersetzung von James H. Charlesworth (unter Mithilfe von James R. Mueller). In Aufstieg und Niedergang der römischen Welt (ANRW). Geschichte und Kultur Roms im Spiegel der neueren Forschung. T. 2. Principat. Bd. 20. Religion (Hellenistisches Judentum in römischer Zeit, ausgenommen Philon und Josephus). 2. Halbbd. Hrsg. von Wolfgang Haase. Berlin, New York, W. de Gruyter, 1987. p. 951-987.
- Schucking, Engelbert L. The first Texas Symposium on Relativistic Astrophysics. Physics today, v. 42, Aug. 1989, pt. 1: 46-52. ports.
- Schütz, Michael. Cassinis Meridian in Bologna. Sterne und Weltraum, 28. Jahrg., Juni 1989: 362-366. illus. (part col.)
- Seager, William E. Scientific explanation and the trial of Galileo. International studies in the philosophy of science, v. 1, Apr. 1987: 176-195.
- Segonds, Alain. Proclus: astronomie et philosophie. <u>In</u> Proclus, lecteur et interprète des anciens. Actes du colloque international du CNRS, Paris (2-4 octobre 1985), publiés par Jean Pépin et H. D. Saffrey. Paris, Editions du Centre national de la recherche scientifique, 1987. (Colloques internationaux du Centre national de la recherche scientifique) p. 319-334.
- Segre, Michael. Viviani's life of Galileo. Isis, v. 80, June 1989: 206-231.
- Serrada, Peter A. The Mogey Telescope Company rediscovered. Rittenhouse, v. 3, Aug. 1989: 141-145. illus.
- Shamsi, F. A. Three proposed Arabian calendars with special reference to the date of Hijrah. Islamic quarterly, v. 32, 3d quarter 1988: 139-172.

 Considers reconstructions of the pre-Islamic Arabian calendar.
- Shapiro, Irwin I. Hertz and Michelson. In International Astronomical Union.

 Symposium, 129th, Cambridge, Mass., 1987. The impact of VLBI on astrophysics and geophysics. Proceedings, edited by M. J. Reid and J. M. Moran. Dordrecht, Boston, Kluwer Academic Publishers, 1988. p. 1-6.
- Sidharth, B. G. The unmythical Puranas: a study in reverse symbolism. Griffith observer, v. 53, Apr. 1989: 10-18. illus.
- Silverman, S. M. Joseph Henry and John Henry Lefroy: a common 19th century vision of auroral research. Eos, v. 70, Apr. 11, 1989: 227-228, 230, 233-234, 237-238, 240. illus., ports.

- Simek, Rudolf. Die Kugelform der Erde im mittelhochdeutschen Schriften. Archiv für Kulturgeschichte, 70. Bd., Heft 2, 1988: 361-373.
- Sinigaglia, Gianfranco. Eppure ruota! Astronomia, anno 9, dic. 1987: 32-38.
 illus. (part col.)
 On attempts to prove experimentally that the earth rotates.
- Sinnerstad, Ulf. Astronomy and the first observatory. In Science in Sweden: the Royal Swedish Academy of Sciences, 1739-1989. Tore Frängsmyr, editor. Canton, MA, Science History Publications, U.S.A., 1989. p. 45-71. illus., ports.
- Smith, Margarete G. Voltaire's reaction to Maupertuis's Lettre sur le progrès des sciences. In Man and nature. Proceedings of the Canadian Society for Eighteenth-Century Studies. v. 7. Edmonton, Alta., Published for the Society by Academic Print. & Pub., 1988. p. 159-166.
- Smith, Richard J. A note on Qing dynasty calendars. Late imperial China, v. 9, June 1988: 123-145. Includes a location list of calendars and a glossary.
- Smith, Robert W. The Cambridge network in action: the discovery of Neptune. Isis, v. 80, Sept. 1989: 395-422. illus.
- Sommarström, Bo. Ethnoastronomical perspectives on Saami religion. In Symposium on Saami Religion, Turku, Finland, 1984. Saami religion. Based on papers read at the Symposium on Saami Religion held at Åbo, Finland, on the 16th-18th of August 1984. Edited by Tore Ahlbäck. Åbo, Finland, Donner Institute for Research in Religious and Cultural History; Stockholm, Sweden, Distributed by Almqvist & Wiksell International, 1987. (Scripta Instituti Donneriani Aboensis, 12) p. 211-250. illus.
- Spitzer, Lyman. Dreams, stars, and electrons. In Annual review of astronomy and astrophysics. v. 27; 1989. Palo Alto, Calif., Annual Reviews. p. 1-17. port.

 The portrait faces p. 1.
- Stephens, Carlene E. Partners in time: William Bond & Son of Boston and the Harvard College Observatory. Harvard Library bulletin, v. 35, fall 1987: 351-384. illus., port.
 - "This essay accompanies an exhibition held at the Collection of Historical Scientific Instruments, Harvard University, from 10 January through 9 June 1989."
- Stephenson, F. Richard. Evidence for solar variability from historical records. The history of the Earth's rotation as determined from eclipses and occultations. Historical supernovae. In International School of Physics "Enrico Fermi," Varenna, Italy, 1985. Solar-terrestrial relationships and the earth environment in the last millennia. Edited by G. Cini Castagnoli. Amsterdam, New York, North-Holland, 1988. (Proceedings of the International School of Physics "Enrico Fermi," course 95) p. 133-182.
- Stewart, Joe D. Structural evidence of a luni-solar calendar in ancient Mesoamerica. In Estudios de cultura náhuatl. v. 17; 1984. México, Universidad Nacional Autónoma de México, Instituto de Investigaciones Históricas. p. 171-191.

- Strobel, August. Weltenjahr, grosse Konjunktion und Messiasstern. Ein themageschichtlicher Überblick. <u>In</u> Aufstieg und Niedergang der römischen Welt (ANRW). Geschichte und Kultur Roms im Spiegel der neueren Forschung. T. 2. Principat. Bd. 20. Religion (Hellenistisches Judentum in römischer Zeit, ausgenommen Philon und Josephus). 2. Halbbd. Hrsg. von Wolfgang Haase. Berlin, New York, W. de Gruyter, 1987. p. 988-1187. illus., plates.
- Stuhlhofer, Franz. Georg Tannstetter (Collimitius). Astronom, Astrologe und Leibarzt bei Maximilian I. und Ferdinand I. In Verein für Geschichte der Stadt Wien. Jahrbuch. 37; 1981. Wien. p. 7-49. facsim., port.
- Sullivan, Woodruff T. Early years of Australian radio astronomy. In Australian science in the making. Edited by R. W. Home. Cambridge, New York, Cambridge University Press, 1988. p. 308-344. illus., group port.
- Suter, E. M. The Port Elizabeth Peoples' Observatory—a short history. <u>In</u>
 Astronomical Society of Southern Africa. Monthly notes, v. 48, Apr. 1989: 27-28.
 - The observatory's telescope, an 8-inch Cooke refractor, had been used for 30 years by the Rev. T. E. R. Phillips.
- Szkop, Henryk. Czterdzieści lat Muzeum Kopernika w Fromborku. Urania (Kra-ków), r. 60, luty 1989: 55-56.
- Szymański, Józef. Rational evaluation of the world and mediaeval Polish calendariography. <u>In</u> Quaestiones medii aevi. v. 3. Warszawa, Éditions de l'Université de Varsovie, 1986. p. 111-125.
- Tannenbaum, Nicola. Shan calendrical systems: the everyday use of esoteric knowledge. Mankind, v. 18, Apr. 1988: 14-25.
- Tenn, Joseph S. The rise and fall of astrophotography. Griffith observer, v. 53, Aug. 1989: 2-11. illus.
- Tiemann, Klaus H. Eine populärwissenschaftliche Aktiengesellschaft: zum 100. Gründungsjubiläum der Berliner Urania. Astronomie und Raumfahrt, 26. Jahrg., Heft 2, 1988: 51-53.
- Toomer, Gerald J. Hipparchus and Babylonian astronomy. In A Scientific humanist; studies in memory of Abraham Sachs. Edited by Erle Leichty, Maria deJ. Ellis, and Pamela Gerardi. Philadelphia, 1988. (Occasional publications of the Samuel Noah Kramer Fund, 9) p. 353-362.
- Traat, Peeter. Kui mõõdeti esimeste tähtede kaugused. [First observations of stellar parallaxes] <u>In</u> Struve (W.) nimeline Tartu Astrofüüsika Observatoorium. Tartu tähetorni kalender. 65. aastak; 1988 aastaks. Tallinn, "Valgus," 1988. p. 90-97. facsims.
- Tuchańska, Barbara. Newton's discovery of gravity. In Newton and the new direction in science. Proceedings of the Cracow conference, 25 to 28 May 1987. Edited by G. V. Coyne, M. Heller, and J. Źyciński. Città del Vaticano, Specola Vaticana, 1988. p. 45-53.
- Turner, A. J. Sun-dials: history and classification. History of science, v. 27, Sept. 1989: 303-318.
 - "This paper was presented at the first international conference on the history of sun-dials, 'Per una storia degli orologi solari', Vicenza, Padua and Brugine, 22-24 May 1985."

- Ulansey, David. The Mithraic mysteries. Scientific American, v. 261, Dec. 1989: 130-135. col. illus., col. map.
 - "The icons of this ancient Mediterranean cult can be deciphered only in terms of a worldview that placed the powers controlling human destiny not on the earth but in the stars."
- Vasilevskis, Stanislavs, <u>and</u> Donald E. Osterbrock. Charles Donald Shane. <u>In</u>
 National Academy of <u>Sciences</u>. <u>Biographical memoirs</u>. v. 58. Washington,
 D.C., National Academy Press, 1989. p. 488-511. port.
- Vega Sosa, Constanza. El curso del Sol en los glifos de la cerámica azteca tardía. In Estudios de cultura náhuatl. v. 17; 1984. México, Universidad Nacional Autónoma de México, Instituto de Investigaciones Históricas. p. 125-170. illus.
- Verdet, Jean P. La diffusion de l'heliocentrisme. Revue d'histoire des sciences, t. 42, juil./sept. 1989: 241-253.
 English summary.
- Viik, T. ENSV TA Astrofüüsika ja Atmosfäärifüüsika Instituudi algusaastad. [The first year of the Institute of Astrophysics and Atmospheric Physics of the Estonian Academy of Sciences] In Struve (W.) nimeline Tartu Astrofüüsika Observatoorium. Tartu tähetorni kalender. 65. aastak; 1988 aastaks. Tallinn, "Valgus," 1988. p. 37-46.
- Waerden, Bartel L. van der. The astronomical system of the Persian tables II.

 Centaurus, v. 30, no. 3, 1987: 197-211. illus.

 "Part I of this paper was published in Centaurus 13 (1968) pp. 1-28

 under the title "Das astronomische System der persischen Tafeln I" by

 J. J. Burckhardt and B. L. van der Waerden."
- Waerden, Bartel L. van der. A summary of Roger Billard's L'Astronomie indienne. Gaṇita-bhāratī, v. 10, no. 1/4, 1988: 21-30. illus.
- Wahiche, Jean D. L'administration de l'Observatoire de Paris au temps de la Révolution. L'Astronomie, v. 103, juin 1989: 249-257. illus., ports.
- Weinstock, Robert. Long-buried dismantling of a centuries-old myth: Newton's <u>Principia</u> and inverse-square orbits. American journal of physics, v. 57, Sept. 1989: 846-849.
 - Refers to a study of Newton's life and work by Ferdinand Rosenberger published in 1895.
- Weise, Wilfried. 80 Jahre Urania-Volkssternwarte Jena. Die Sterne, 65. Bd., Heft 3, 1989: 172-176. illus.
- Wenskus, Otta. Les vrais et les faux calendriers agricoles romains chez Caton, Varron et Columelle. Histoire & mesure, v. 1, no 3/4, 1986: 107-118.
 - English abstract: p. 274.
- Wiseman, Donald J. A note on some prices in late Babylonian astronomical diaries. In A Scientific humanist; studies in memory of Abraham Sachs. Edited by Erle Leichty, Maria deJ. Ellis, and Pamela Gerardi. Philadelphia, 1988. (Occasional publications of the Samuel Noah Kramer Fund, 9) p. 363-373.
- Wolfschmidt, Gudrun. History and development of the "Astronomische Gesellschaft" (1863-1945). In Abstracts of papers presented at the fall meeting of the Astronomische Gesellschaft at Graz, September 12-15, 1989. Hamburg, 1989. (Astronomische Gesellschaft. Abstract series, no. 3) p. 132.
- Zusi, Luigi. I prodigi celesti di Giulio Ossequente. Astronomia, anno 10, ag./sett. 1988: 28-33. illus. (part col.)
 - On the <u>Liber Prodigiorum</u>, a 16th-century work that includes reports of aurorae, comets, and eclipses.