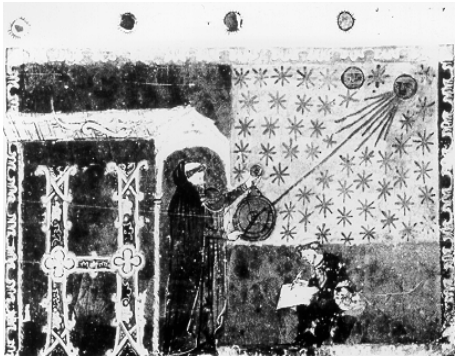
INTERNATIONAL UNION OF HISTORY & PHILOSOPHY OF SCIENCE



CHAMA NEWSLETTER

Commission for History of Ancient and Medieval Astronomy

Editors: S.M. Razaullah Ansari, Anne Tihon Vol. 7, No. 1, June 2009

Assistant Secretary: Laurence Tuerlinckx Website: http://chama.fltr.ucl.ac.be

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FOREWORD BY THE PRESIDENT

Let me announce gladly that our Commission's Symposium (S-1) has been successfully organised.

We are publishing here its programme, which consists of 15 talks, divided into two sessions. The first deals with "Ptolemy, His Writings and their Transmission: Status of Present Research" and the second is on "Contextual Oriental Studies". I acknowledge here all speakers, who accepted our request to participate in this Symposium. Please note that each session is divided further into two sub-sessions due to the allotted time slot. The Symposium will be held at the Venue of the Congress in Room 7 on July 29 and 30 at the following times: 15:00-17:00, 17:30- 19:30. I look forward to meeting all of you in Budapest. Please ask your interested friends and colleagues also to attend.

I may add that the third circular of the Congress is available on its website. There are several new links for the information of the participants.

In this issue, we report details of the "Belgian Indology Day" held in Brussels and devoted to Astronomy and Mathematics. Interesting talks were held concerning ancient and medieval India. We publish also a short report on an international conference held in Samarqand (Uzbekistan), June 9-11, to commemorate the 615th Birth Anniversary of Sultan Ulugh Beg and which was organised by the Uzbek Academy of Science.

As in previous issues, we publish here notices of five new books and three new editions of classical works. I may point out particularly the important volume edited by Pankenier, Xu, and Jiang, Historical Observational Records of Comets and Meteor Showers from China, Japan, and Korea.

Further, we list the astronomical papers published in the journals: Suhayl, AIHS, JHA, Dio and SCIAMVS. Our list of publications by members is very unsatisfactory indeed. Please help the editors by sending just a list or better copies of your recent published papers, so that the Commission could build a bibliographical database on ancient and medieval astronomy.

Last but not the least, I conclude this Foreword at a very sad note. Teacher and friend of many of us, Edward S. Kennedy, passed away in this very 'Astronomy Year'. We publish his obituary here. I possess personally many a fond memory of that great scholar of Islamic science. I met him for the first time in the First International Symposium on History of Arabic Science, held in Aleppo in 1976 and later several times in Frankfurt at Fuat Sezgin's Institute. He was always very accessible and he inspired me by his humility and vast knowledge. He sent me unfailingly his preprint or reprints. I was very happy that he could visit India, and participated in the Colloquium on History of Oriental Astronomy, which was organised at New Delhi in 1985, when the General Assembly of International Astronomical Union was held. I could then accompany him especially to Jaipur to visit Raja Sawai Jai Singh Observatory. In his honour, the authorities of the observatory made an exception; they agreed to open the two rooms in which the replicas of Fakhri sextant after Ulugh Beg's Observatory could be examined. May God shower His *Rahmat* on his soul and inspire all of us to emulate his scholarship and erudition.

S. M. Razaullah ANSARI

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XXIII INTERNATIONAL CONGRESS OF HISTORY OF SCIENCE AND TECHNOLOGY

Ideas and Instruments in Social Context

Budapest, Hungary

28 July - 2 August July, 2009

Kindly visit the Congress site: http://www.conferences.hu/ichst09/index.htm

The 3rd Circular (Organisation, Preliminary Program, General information) is now available:
http://www.conferences.hu/ichst09/Third_circular.pdf
Abstracts on the web 30 June, 2009
Opening of the Congress 28 July, 2009

Contact Address:
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and/or her assistant Ms. Marianne Kindl: kindl@sztaki.hu

CHAMA SYMPOSIUM S-1 (BUDAPEST 2009)

ANCIENT AND MEDIEVAL ASTRONOMY WITH SPECIAL EMPHASIS ON ITS SOCIO-CULTURAL CONTEXT

Organisers: S. M. R. ANSARI (India) Chair, Julio SAMSÓ (Spain), Anne TIHON (Belgium)

Session I: Ptolemy, His Writings and their Transmission: Status of Present Research

Section Ia. Chair: Alexander JONES

1. Alexander JONES (Toronto/Canada): Babylonian and Greek Antecedents of Ptolemy's Tables.
2. Anne TIHON (Louvain-la-Neuve/Belgium): Ptolemy, and His Time: An Unedited Astronomical Papyrus.
3. Raymond MERCIER (Cambridge/UK): Introducing the Edition of the Handy Tables of Ptolemy.
4. Julio SAMSÓ (Barcelona/Spain): *Mustawfī Zīj* by Ibn al-Raqqām of Tunis and Granada (14th c.).

Section Ib. Chair: Julio SAMSÓ

5. José BELLVER (Barcelona/Spain): Ptolemaism in al-Andalus: Jābir b. Aflah and the Evolution of the Term *Hay'a*.
6. Montse DÍAZ-FAJARDO (Barcelona/Spain): On *Tasyir*. Ptolemy´s Traces in the Islamic West: Ibn Abi-l-Rijal and Alfonso X.
7. K. RAMASUBRAMANIAN (Mumbai/India): Jagannātha´s *Samrāt-Siddhānta*: A Translation of *Almagest* into Sanskrit.
8. S. M. Razaullah. ANSARI, (Aligarh/India), The Indian Scholar Khayrullāh Muhandis and his Persian Translation of al–Ṭūsī ´s Recension of *Almagest*.

Session II: Contextual Oriental Studies

Section IIa. Chair: Raymond MERCIER

9. Michio YANO (Kyoto/Japan): Buddhist Astronomy in its Cultural Context.
10. Sonja BRENTJES (Seville/Spain): Patronage of Astronomy and Astrology in Post-classical Islamic Societies.
11. YUNLI SHI (Hefei/China): Knowledge Secrecy, and the Chinese Assimilation of Islamic Astronomy in the 14th Century.
12. XIAOCHUN SUN (Beijing/China): The Impact of the Telescope on Astronomy and Society in China.

Section IIb. Chair: Anne TIHON

13. S. R. SARMA (Aligarh/India & Düsseldorf/Germany): *Yavana-yantra* to *Yantra-rāja*: Reworking of Arabic Astrolabes in India.
14. S. SRIRAM (Chennai/India): Astronomy Part of the Kerala Work, *Yuktibhāsha* (circa 1530 CE).

15. Farid GHASSEMLOU and Fariba SABET (Tehran/Iran): A Survey of Persian *Zījes* extant in Iran with special stress on their use in Medieval Iranian Society.
16. S.M.R. ANSARI: Final Remarks

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REPORT OF THE 11TH BELGIAN INDOLOGY DAY

ASTRONOMY AND MATHEMATICS IN ANCIENT INDIA

Brussel, April 24, 2009

This Indology day especially devoted to mathematics and astronomy, in the context of ancient India, allowed the lecturers, Sanskritists and/or historians of sciences, to present their topic of research: The observational basis of the Indian planetary models (R. Mercier), the astronomical efforts maintained at the Mughal court (C. Minkowski), the contribution of the astronomers of Kerala (K. Ramasubramanian), the astronomical calculation and devotional poetry (P.-S. Filliozat), the musical applications of mathematics (F. Patte) and algebra (J.M. Delire). There was also a short exhibition of the Indian astronomical instruments preserved in Belgium, particularly of the oldest known Indian astrolabe for instance the astrolabe labelled in Sanskrit in 1605 in Gujrat (India).
Website of the Indological studies in Belgium: http://belgianindology.lalibreblogs.be/

SUMMARIES

R. MERCIER: ***The Reality of Indian Astronomy***

Since the beginning of the interest among European scholars in Indian astronomy, there has been a dispute about its antiquity in general, and the age of certain texts in particular. This dispute could not be solved by exaggerated claims of Indian scholars. Thirty years ago, there was a profound investigation by the French Sanskritist Roger Billard, who presented results that ought to have settled the main features of the history of Indian astronomy.. His work, however, was much disputed in some quarters, not least by the American scholar David Pingree. In this talk, Mercier reviewed Billard's approach, and demonstrated the strength of his claims. All of his results have been recomputed, and revised where appropriate.

At the heart of the dispute about Billard's work is the question as to whether the parameters of the Indian canons such as that of Āryabhaṭa (ca A.D. 500) were based on observations made by him, or merely inherited from Greek sources. This question has been discussed in detail.

J.M. DELIRE: ***Between astronomy and mathematics, the Indian discoveries in trigonometry: the construction of the tables of the sine***

Since the *Pauliśasiddhānta*, as summarised in the *Pañcasiddhāntika* of Varāhamihira (6thc.), Indian astronomers used the sine rather than chords, and established tables of the sine for arcs in multiples of 3;45. Contrary to the *Pauliśasiddhānta*, Āryabhaṭa (6th c.) presented a table of differences of the sine coupled with a recurrence formula which neither he nor his commentator Bhāskara (629) explained. In order to obtain a 'proof' (*upapatti*) of the validity of this formula, one had to await for the astronomers of Kerala (14th-15th c.), who gave numerous *upapatti* of trigonometric results. We see in particular how Nīlakaṇṭha (1444-*ca* 1545) and Jyeṣṭhadeva (*ca* 1500-1610) established Āryabhaṭa's

formula, and derived a method of interpolation of sine and cosine for non-tabulated arcs, equivalent to Taylor's formula.

P.-S. FILLIOZAT: ***Mathematics and scholasticism in medieval India, the example of the* Haricarita *of Parameśvara Bhaṭṭa.*** (This talk was delivered by Chr. Vielle)

According to its title *Haricarita* presents 'The Adventures of Hari', a composition in verse on the subject of viṣṇuite mythology. It is indeed that: a résumé of Song X of the *Bhāgavata Purāṇa* devoted to the childhood of Kṛṣṇa. On re-reading, one notices at the start of each verse one of the 248 *vākyas* of Vararuci. These are groups of four to six syllables denoting numbers, which mark the positions of the moon during a period of 248 days, representing a complete cycle of the fluctuations of longitude against the mean. A method of calculation allows one to predict the daily position of the moon, on the basis of these *vākyas*. This double purpose, astronomical and devotional rests on an exercise of great literary virtuosity: the union of astronomical information with devotional poetry. To do justice to this text one has to present its astronomical content, its method of composition, its poetic value, and its religious inspiration.

S.R. SARMA: ***Indian Astronomical Instruments in Belgium***

Astronomical and time-measuring instruments constitute an important source for the reconstruction of the history of astronomy of any culture. Finding no documentation on the extant Indian instruments, I embarked on an exploration of museums and private collections about twenty years ago and located some 450 specimens in India, Europe and the US. In this connection, I had the opportunity of studying ten instruments in different private and public collections in Belgium in February 1996. In this lecture, I describe these specimens, their history and importance. Special attention was paid to two instruments, for these are the earliest known extant specimens of their kind, viz. a Sanskrit astrolabe made in 1605 in Gujarat and a *Dhruvabhrama-yantra* crafted in 1785 in Rajasthan.

CH. MINKOWSKI: ***Sanskrit Astronomers and the Mughals***

In the sixteenth and seventeenth centuries, learned Brahmins were present at the Mughal court, in a variety of roles. Some came from Banaras only as visitors, representing the collective world of Sanskrit learning; others were attached as Mughal courtiers such as Khān Khānān, Asaf Khān, and Todar Mal; still others served as scribal service personnel in Akbar and Dārā Shikūh's translation projects. This paper focuses especially on the 'exact scientists' who were appointed as 'resident' astronomers or astrologers, and who composed works in Sanskrit that engaged with the traditions of the exact sciences originally communicated in Arabic and Persian. Figures to be discussed include Nīlakaṇṭha, author of the *Tājikanīlakaṇṭhī* and his brother Rāmā, author of the *Muhūrtacintāmaṇi*, as well as Nityānanda, who translated the Persian *Zīj- i Shāh Jahānī* into Sanskrit as the *Siddhāntasindhu*, and later wrote a further apologetic work, the *Sarvasiddhāntarāja*, which argued for the incorporation of some astronomical techniques, models and parameters from the 'yavanas' or 'romakas'.

K. RAMASUBRAMANIAN: ***Evolution of Planetary Models : Āryabhaṭa to Nīlakaṇṭha***

Though at least from the time of Āryabhaṭa (499 AD), the Indian astronomers have been employing precise analytical expressions for finding the longitudes and latitudes of the planets, there was an error in the application of 'manda-saṁskara' ('equation of centre' correction) for the interior planets. Nīlakaṇṭha (c. 1500 AD) seems to be the first savant in the history of astronomy to have clearly derived from the computational scheme, and not

from any speculative or cosmological argument, the correct application of equation of centre correction for Mercury and Venus. Besides tracing the development of planetary models in the Indian tradition, we also discuss the transmission hypothesis that has been proposed and maintained by the indologists for over a century and a half.

F. PATTE: ***Rhythms and algorithms, the Indian mathematical genius***

When reading the treatises of Indian prosody by Piṅgala, *Chandaḥsūtra*, or of Kedara, *Vṛttaratnākara*, or the treatises of music such as the *Saṁgītaratnākara* of Śārṅgadeva, one encounters jewels of the algorithmic art which Indian mathematicians developed for the solution of equations. For example, chapter six of the *Vṛttaratnākara* of Kedara is devoted to an exhaustive study of the possible combinations of long and short syllables to produce a metre of a given length. In chapter four of the *Saṁgītaratnākara* one finds a study, no less exhaustive, on the manner of combining four units of elementary time into a musical time.

There are, for example, 16 ways of obtaining a metre of four syllables, combining long and short alternately. One has 19 possible ways to construct a musical measure with a duration of 6 quavers, combining quavers, crotchets, minims, dotted quavers; the construction of all these possibilities is called *prastāra* in the Sanskrit treatises.

We have tried to present, according to the musical treatises, algorithms elaborated by the Indian *paṇḍits* to establish these *prastāra*, whose construction shows great mathematical facility, leading to other skills such as enumeration by means of recurrence formulae (*saṁkhyā*), the establishment of a rhythmic model given its rank in the *prastāra* (*naṣṭa*), or conversely, the determination of the rank of a given model (*uddiṣṭa*).

K. MAHESH & R. V. PAI: ***Turning an Algebraic Expression into an Infinite Series***

Turning a finite expression into an infinite series is indeed one of the brilliant accomplishments of the human intellect. Generally, Newton is considered to be the pioneer who opened up the gate for others to enter into this bizarre arena that seems to have given an impetus to the advancement of science and technology. However, if one were to historically track the foremost amongst the mathematicians who worked in this area, it turns out that the contributions of Kerala mathematicians between fourteenth and sixteenth centuries are indeed remarkable. During the presentation, we illustrate this by considering a typical example from the work *Kriyākramakarī*, an elaborate commentary on *Līlāvatī* of Bhāskarācārya, by Śaṅkara Vāriyar (c. 1534 AD).

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REPORT OF THE INTERNATIONAL SCIENTIFIC CONFERENCE

MIRZA ULUGHBEG AND HIS CONTRIBUTION TO THE DEVELOPMENT OF THE WORLD SCIENCE

Samarqand (Uzbekistan), June 9-11, 2009

This conference was sponsored and organised by the Uzbekistan Academy of Science and was dedicated to the 615th Birth Anniversary of Sultan Ulugh Beg and International Year of Astronomy. At the opening Ceremony of the Conference on June 10, the plenary session was presided over by the President of the Academy, Shavkat Salikhov. The welcome addresses were delivered by the Deputy Prime Minister of Uzbekistan, Governor of the Samarqand Region and UNESCO Representative in Uzbekistan, There were three scientific talks by

Ashraf Akhmadov (the renowned editor of *Zīj-i Ulugh Bég* in Russian and Uzbek languages), Fredrique B.-Bressand(France) and Shuhrat Ehgamberdiev (director of Bīrūnī Observatory in Tashkent).

The Conference was excellently organised by Shurat Ehgamberdiev with lots of hard work. It comprised the following parallel sessions:

Session I. The Scientific School of Ulugh Beg and its Role in the Development of World Science, with 16 talks.

Session II. Ulugh Beg and His Epoch, with 16 talks, and

Session III. Education and Culture in the Epoch of Ulugh Beg , with 24 talks.

For want of space and time, I list in the following a few talks relevant to astronomy only.

A. AKHMADOV (Uzbekistan), *Zīj-i Ulugh Bég* and its role in the development of astronomy in the Middle Ages.

Sh. EHGAMBERDIEV (Uzbekistan), Understanding the scientific heritage of Ulugh Beg, achievements made and challenges ahead.

S.M.R. ANSARI (India), The transmission of Ulugh Beg's school of astronomy to Medieval India and its impact on the development of Indian astronomy.

F. GÜNERGUN (Turkey), A 17th century translation of *Zīj-i Ulugh Beg* .

Atila ÖZÜÇ (Turkey), Manuscripts related to Ulugh Beg from Kandilli observatory collection.

F. LE GUET TULLY, Ulugh Beg in the West: ascertained legacy and possible filiations.

Isakhaya YOICHI (Japan), Identification of Chinese and Uighur ages in *Zīj-i Ulugh Bég*: some consideration on the origin of Chinese Calendar and its titles.

O. TURZUNOV (Uzbekistan), Armillary Sphere of Ulugh Beg's Observatory.

S. AZIZOV (Uzbekistan), Observatory of Ulugh Beg and its tools.

M. MAMADAZIMOV (Uzbekistan), Lunar calendar in *Zīj-i Gurgani*.

A. OTAKHODJAEV (Uzbekistan), Astronomical observations of Ulugh Beg and calendar of Central Asia.

At the Concluding Session chaired by Sh. Ehgamberdiev, the opening address was on "Al-Bīrūnī and the sprit of learning" by M. Shamsher ʿAlī (President of the Bangladesh Academy of Science) and the participants stressed particularly the study of manuscript sources of Ulugh Beg's school and times. It was finally resolved that the President of the Republic of Uzbekistan may be approached for generous support for research in Uzbek scientific heritage.

Last but not the least, I acknowledge here gratefully the invitation and generous support by the President of Uzbekistan Academy of Science (Tashkent) and an invitation also by the Director of Institute of Oriental Studies (Tashkent). I appreciate particularly my dear friend Shuhrat Ehgamberdiev for his special attention to my hospitality.

S. M. Razaullah ANSARI

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OBITUARY

Edward S. Kennedy
(3 January 1912 - 4 May 2009)

Born in Mexico, E.S. Kennedy moved with his family in Easton (Pennsylvania) where he is graduated with a BS in Electrical Engineering from Lafayette College in 1932. He accepted an appointment to teach at Alborz College, a secondary school for boys outside Tehran, Iran, run by the American Presbyterian Mission.

He spent the next four years in Iran and became fluent in both spoken and written Farsi. His time in Iran stimulated an interest in Islamic culture and history, and on his return to the US he entered Lehigh University to pursue a PhD in Mathematics, which he completed in 1939. He then joined the University of Alabama as an Assistant Professor, during which time he began to publish research on medieval Islamic astrolabes.

In 1941, as one of the few American officers with a command of Farsi, he returned to Iran to be assistant military attaché in Tehran.

With the close of the war, Kennedy returned briefly to the US to work with Dr. George Sarton at Harvard University, Massachusetts. It was at this time that he began a close working relationship and friendship with Dr. Otto Neugebauer, founder of the History of Mathematics Department at Brown University in Rhode Island, a relationship that was to last until Neugebauer's death in 1990.

With the focus of his research involving the study of medieval Islamic astronomical tables written both in Arabic and Persian, Kennedy accepted in 1946 a professorship at the American University of Beirut, Lebanon, in part with a mind to improve his knowledge of Arabic. 1956 saw the publication of his groundbreaking "Survey of Islamic Astronomical Tables" in the *Transactions of the American Philosophical Society.*

In 1951, he married Mary Helen Scanlon, a teacher at what was then called the Beirut College for Women (now the Lebanese American University). Although Kennedy took periodic leaves to pursue his collaboration with Neugebauer at Brown, he continued to teach in the Mathematics Department for the American University of Beirut for the next 35 years, retiring in 1976 at the close of the first, most vicious phase of the civil war that afflicted Lebanon.

Retirement from teaching implied no let-up in his research activities, with stays at the American Research Centre in Egypt (1976-1978) and the Institute for the History of Arabic Science in Aleppo, Syria (1978-1980). Professor and Mrs. Kennedy reluctantly left Lebanon permanently in 1984. Four years at the Institute for the History of Arab and Islamic Science in Frankfurt were followed by a move to Princeton, New Jersey, in 1989. Despite his many years abroad, Kennedy passed away at the age of 97 not far from his Easton boyhood home, in Doylestown, Pennsylvania.

E.S. Kennedy was instrumental in raising scholarly awareness of the richness and sophistication of the exact sciences in the medieval Islamic world through his translation and analysis of hitherto little-known Arabic manuscripts. Professor Emeritus at the American University of Beirut, he was made a member of the Order of *al-Istiqlal* by Crown Prince Hassan of Jordan in 2001 for his contribution to the study of Islamic culture.

He was much appreciated by those who knew him for his modesty and sense of humour as well as his keen loyalty to Mary Helen, a kindred spirit in her love of music and interest in

the lands and cultures of the Middle East. He is survived by his wife, three children, and six grand-children.

Courtesy Sally Ragep (McGill Univ.)

Full text available at: http://islamsci.mcgill.ca/grants/GrantsPrizes.htm#Kennedy

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NEW BOOKS

1. Purushottama BILMORIA and Melukote K. SRIDHAR (eds), *Traditions of Science, Cross-cultural Perspectives. Essays in honour of B.V. Subbarayappa*, Delhi: Munshiram Manoharlal Publishers, 2007. Pp. 373, 16,5 x 25 cm, 27 USD, ISBN: 978-81215-1177-3.

The following contributions of this Festschrift concern the history of astronomy:

Yasukatsu. MAEYAMA, "On the Celestial Pole", pp. 21-34.
S.M. Razaullah ANSARI, "Ibn al-Haytham, the First Proponent of the Scientific Method", pp. 35-58.
Michio YANO, "Pañcānga, Ancient and Modern", pp. 59-71.
Raymond MERCIER, "Astronomical Computation for the History of Indian Astronomy", pp.72-82.

2. *Ganita-Yukti-bhasa [Rationales in Mathematical Astronomy]* of Jyesthadeva, in two volumes. Vol. I: Mathematics, Vol. II: Astronomy. Malayalam text critically edited with English translation by K.V. SARMA, with explanatory notes by K. RAMASUBRAMANIAN, M.D. SRINIVAS and M.S. SRIRAM, Hindustan Book Agency edition, 2009. Pp. 1084 in 2 volumes; approx. 152 EUR; ISBN: 978-1-84882-072-2.

This edition was announced and described before its publication in the last CHAMA Newsletter (6[2])

3. Glen VAN BRUMMELEN, *The Mathematics of the Heavens and the Earth: The Early History of Trigonometry*, Princeton, NJ: Princeton University Press, 2009. 352 pages, 9.4 x 6.2 x 1.2 inches, ISBN: 978-069112973-0

Presentation by the Publisher

Glen Van Brummelen identifies the earliest known trigonometric precursors in ancient Egypt, Babylon, and Greece, and he examines the revolutionary discoveries of Hipparchus, the Greek astronomer believed to have been the first to make systematic use of trigonometry in the second century BC while studying the motions of the stars. The book traces trigonometry's development into a full-fledged mathematical discipline in India and Islam; explores its applications to such areas as geography and seafaring navigation in the European Middle Ages and Renaissance; and shows how trigonometry retained its ancient roots at the same time that it became an important part of the foundation of modern mathematics.

The Mathematics of the Heavens and the Earth looks at the controversies as well, including disputes over whether Hipparchus was indeed the father of trigonometry, whether Indian trigonometry is original or derived from the Greeks, and the extent to which Western science is indebted to Islamic trigonometry and astronomy. The book also features extended excerpts of translations of original texts, and detailed yet accessible explanations of the mathematics in them.

4. Robert HANNAH, *Time in Antiquity* (*Sciences of Antiquity Series*), Oxon: Routledge, 2009. Pp. 210, 9.2 x 6.2 x 0.7 inches, ISBN: 978-0-415-33156-2 (Paperback).

Presentation by the Publisher:

Explores the different perceptions of time from Classical antiquity, principally through the technology designed to measure, mark or tell time. This book offers insights into ordinary people's perceptions of time and time-keeping instruments. It presents an analysis of the development of sundial technology.

5. David PANKENIER, ZHENTAO XU, and YAOTIAO JIANG, *Archaeoastronomy in East Asia: Historical Observational Records of Comets and Meteor Showers from China, Japan, and Korea*, Hamherst, NY: Cambria Press, 2008. Pp. 776 pages, 9.3 x 6.4 x 1.9 inches, ISBN: 978-160497-587-1.

Presentation by the Publisher:

Until now, important research on the historical records of comets and meteor showers from China, Japan, and Korea has remained the exclusive preserve of those with expertise in the relevant languages. With a compilation like the present volume, the authors hope to ameliorate that situation. Applying the same rigorous selection criteria and style of presentation as in the previous catalogue, assembled and translated here are some 1,500 additional observations of comets and meteor showers from China, Japan, and Korea spanning nearly three millennia. With the publication of this volume, most of the important historical records of East Asian astronomical observations are now accessible in English. The introductions and appendices provide all the required information on specialized terminology, recording conventions, and nomenclature the reader will need to make use of the records. In addition to being an invaluable resource for professional astronomers, East Asian astronomical records have materially aided the research of scholars in fields as diverse as mythology, medieval iconography, ancient chronology, and the oral history of pre-literate societies. The book should be of great interest to cultural astronomers, as well as to those engaged in historical and comparative research.

New edition of classical works

1. Georges FORBES, *History of Astronomy* (1909), Whitefish, MT: Kessinger Publishing, LLC, 2009. Pp. 224, 9 x 6 x 0.6 inches, ISBN-13: 978-110420626-0 (hardcover)
http://www.kessinger.net/searchresults-quicksearch.php

2. Thomas LITTLE HEATH, *The Copernicus of Antiquity (Aristarchus of Samos)* (1920), Charleston, SC: Biblio-Life, LLC, 2008. Pp. 66, 8.8 x 5.8 x 0.2 inches, ISBN-13: 978-0559-66873-9 (Paperback)

3. John Elliot DRINKWATER BETHUNE, *Life of Galileo Galilei*, Charleston, SC: BiblioLife, LLC, 2008. Pp. 298, 10 x 7.5 x 0.7 inches, ISBN-13: 978-0559-32519-9 (Paperback)

Announced

September 2009: Alexander JONES (Editor), *Ptolemy in Perspective: Use and Criticism of his Work from Antiquity to the Nineteenth Century (Archimedes)*, New York: Springer. Pp. 387 pages, ISBN-13: 978-9048127870 (Hardcover).

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PERIODICALS

The contents of the last issue of some periodicals are as follows.

▫ ***Suhayl*** (Barcelona) Vol 7 (2007):

English part:

Nathan SIDOLI and Takanori KUSUBA, "Nasīr al-Dīn al-Tūsī's revision of Theodosius's *Spherics*", pp. 9-46.

José BELLVER, "Jābir b. Aflah on lunar eclipses", pp. 47-91 (with edition of the Arabic text and translation)

David A. KING, "An Instrument of Mass Caculation made by Naṣṭūlus in Baghdad *ca.* 900", pp. 93-119.

Julio SAMSÓ, Lunar mansions and Timekeeping in Western Islam", pp. 121-161.

Jan P. HOGENDIJK, "The Introduction to Geometry by Qustā ibn Lūqā: translation and commentary, pp. 163-221.

Mónica HERRERA-CASAIS, "The Nautical Atlases of 'Ali al-Sharafī", pp. 223-263.

Brian MARTIN, "In Memoriam. J.D. North: historian of the exact sciences", pp. 265-273 with "A Supplement Biography of John David North" [bibliography after 1998]

Reviews:

David A. KING, *In Synchrony with the Heavens. Studies in Astronomical Time keeping and Instrumentation in Medieval Islamic Civilization*; *Volume One: the Call of the Muezzin*; *Volume Two: Instrument of Mass Calculation* (*Islamic Philosophy, Theology and Science. Texts and Studies*). Edited by H. DAIBER and D. PINGREE, Leiden– Boston: Brill, 2004 and 2005. (Rev. by Mercè COMES)

For details and past issues visit the Web-site: http://www.ub.edu/arab/llibrevs/Suhayl.htm

▫ ***Archives Internationales d'Histoire des Sciences***, Vol. 58, 159 (2008):
This issue is a memorial to Adolf-Andrei Pavlovich Youschkevich (Odessa 15 juillet 1906 - Moscou 17 juillet 1993) and is devoted to Mathematics.
For complete contents and past issues:
http://www.brepols.net/catalogue/index.jsp?mpk=20295&art=1093305

▫ ***The Journal for the History of Astronomy***, Vol. 40 (2009)
Articles:

Helge KRAGH, "The Second Moon of the Earth", pp. 1–10.

Luciano BOSCHERO, "Giovanni Borelli and the Comets of 1664–65", pp. 11–30.

Richard STEPHENSON and David A. GREEN, "A Catalogue of 'Guest Stars' Recorded in East Asian History from Earliest Times to A.D. 1600", pp. 31–54.

A.E.L. DAVIS, "Kepler's Via Ovalis Composita": Unity from Diversity, pp. 55–69.

Robert W. SMITH, "Beyond the Galaxy: The Development of Extragalactic Astronomy 1885–1965", Part 2, pp. 71–107.

The content is available at the following site. http://www.shpltd.co.uk/jhacont2009.html

▫ ***Dio* (*The International Journal of Scientific History*)**, Vol. 15 (December 2008)
Editor Dennis Duke <dduke@scs.fsu.edu>
Contents:

Charles KOWAL, "Galileo's Observations of Venus", pp. 3-6.

Dennis DUKE, "Statistical Dating of the Phenomena of Eudoxus", pp. 7-23.

Dennis Duke, "An Interesting Property of the Equant", pp. 24-37.

Nick KOLLERSTROM, "A Database for the British Neptune-discovery Correspondence", pp. 38.

Issue available at: http://www.dioi.org/vols/wf0.pdf

▫ ***S C I A M V S:*** *Sources and Commentaries in Exact Sciences*: Volume 9, December 2008
Chief editor: Michio Yano (yanom@cc.kyoto-su.ac.jp, yanom@sciamvs.org)
One article concerns ancient Astronomy:

Lis BRACK-BERNSEN and Hermann HUNGER, "BM 42282+42294 and the Goal-Year Method", pp. 3-23.

Full contents available at: http://www.sciamvs.org/vol_09.html

▫ ***Journal of Astronomical History and Heritage***: Volume 10 (3) November 2007
This volume contents papers from the Lindsay Centennial Symposium.
For contents visit: http://www.jcu.edu.au/school/mathphys/astronomy/jah2/past10.shtml

▫ ***Arabic Sciences and Philosophy***. Volume 19 (1) 2009. On astronomy:

Christian HOUZEL, "The new astronomy of Ibn al-Haytham", pp. 1-41

For contents of previous issues: http://journals.cambridge.org/action/displayJournal?jid=ASP

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RECENT PUBLICATIONS OF THE MEMBERS OF CHAMA

S. M. R. ANSARI, "Astronomy In Indian Arabic and Persian Sources, Their Translation into Sanskrit and Vice Versa". Invited Lecture delivered at The Asiatic Society (Kolkata), April 14(2009). To be published in the J. of Asiatic Soc.

S.M.R. ANSARI, " Khairullah Muhandis, Director of Raja Sawai Jai Singh's Observatory at Delhi", invited article to be published in *The Encyclopaedia of the World of Islam* (in Persian), Tehran, edited by Golām 'Alī Haddād 'Ādel, Persian translation of the article by Mohammad Bagheri, expected by the end of 2009.

S.M.R. ANSARI, "The Transmission of Ulugh Beg's School of Astronomy to Medieval India and its Impact on the Development of Indian Astronomy", Paper read at the Conference on the *Contribution of Mirza Ulugh Beg to the World Science*, held during June 9-11, 2009, at Samarqand (Uzbekistan).

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NEWS AND ANNOUNCEMENT

▫ ***A new web site for the World History of Science Online (WHSO) project***

Announcement from Stephen Weldon (Chair, Governing Board, WHSO)

"WHSO, which is sponsored by the Division of the History of Science and Technology within the International Union for the History and Philosophy of Science (DHST/IUHPS), will create a free sustainable online resource for the worldwide community interested in the history of science and technology in all its richness and diversity.

The website address is http://www.dhst-whso.org/whso.htm

If you know of relevant resources (both primary source bibliographies of scientists and their work, as well as secondary source bibliographies about the history of science and technology), send your suggestions to Stephen Weldon (s.weldon@dhstweb.org) and Ailie Smith (ailie.smith@unimelb.edu.au). They would like as much of the following information as possible, specifically: (1) name of resource; (2) its scope, purpose, and nature; (3) most relevant URL address; (4) contact information for any individuals associated with the project.

From Stephen Weldon, Chair, Governing Board, World History of Science Online

▫ ***The Antikythera Mechanism Research Project***

"The Antikythera Mechanism Research Project is an international collaboration of academic researchers, supported by some of the world's best high-technology companies, which aims to completely reassess the function and significance of the Antikythera Mechanism."

"More than a hundred years ago an extraordinary mechanism was found by sponge divers at the bottom of the sea near the island of Antikythera. For decades, scientific investigation failed to yield much light and relied more on imagination than the facts. However research over the last half century has begun to reveal its secrets. It dates from around the end of the 2nd century B.C. and is the most sophisticated mechanism known from the ancient world. Nothing as complex is known for the next thousand years. The Antikythera Mechanism is now understood to be dedicated to astronomical phenomena and operates as a complex mechanical 'computer' which tracks the cycles of the Solar System."

Text from: http://www.antikythera-mechanism.gr/

Read more at http://www.antikythera-mechanism.gr/project/overview

The project will be presented at Budapest (ICHS 2009) in the Symposium S-45:

The Antikythera Mechanism and its place in the history of science, technology and ideas

Organisers: Alexander JONES (Canada), Yanis BITSAKIS (Greece)

Provisional program: http://www.antikythera-mechanism.gr/node/473

For more information and bibliography, visit the website of the project: http://www.antikythera-mechanism.gr or http://www.antikythera-mechanism.gr/bibliography)

▫ ***"Astronomy and its instruments before and after Galileo"***

An IAU - INAF, Joint Symposium of Astronomical Observatory of Padova, Italy.

Reminder :

A Joint Symposium of IAU and INAF Sept. 28-Oct.3, 2009, at San Servolo Island, Venice(Italy). It is actually an interdisciplinary conference jointly organized by: International Astronomical Union (IAU), and Astronomical Observatory of Padova (INAF). It is also supported by Scientific Instruments Commission (SIC) of IUHPS.

Sessions:

- Galileo and his time: The Venetian cultural environment
- Astronomy and world heritage initiative (Round table)
- Astronomical structures through the ages: From stone monuments to modern observatories
- Mathematical and mechanical instruments for astronomy
- Sky representation in time
- Astronomy from XVII to XX century
- Space observatories as astronomical instruments
- Astronomy education and development
- Communicating astronomy to the public
- Astronomy and society (Round table)

For programme, registration, etc. visit the Web-site:
http://web.oapd.inaf.it/venice2009/index.php
Contact email address of the symposium: venice2009@oapd.inaf.it

We thank all those who contributed to compile this Newsletter by sending us matters. For the next issue, you can continue to send us information: bibliography, events, announcements of colloquium, exhibitions, interesting Web site, etc., by e-mail to anne.tihon@uclouvain.be.

COMMISSION ON HISTORY OF ANCIENT AND MEDIEVAL ASTRONOMY (CHAMA)

Proforma for Registration of Membership of the CHAMA (http://chama.fltr.ucl.ac.be)

Please, send it to Anne.Tihon@uclouvain.be, or by airmail addressed to Prof. Anne Tihon**

Surname: Title: Age (optional):

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Research Field:

Recent Bibliography (max. 5 works)***:

Scientific Project:

Any other Information:

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Date: Place: Signature (if possible):

*Normally, this information will be displayed on the CHAMA website. If you do not wish that, it will remain confidential. Please mention that specifically.

**Université Catholique de Louvain, Institut orientaliste, Collège Erasme, Place Pascal 1, B-1348 Louvain-la-Neuve, Belgium.

*** If the space is not sufficient, use a separate sheet. Please give exact bibliographical details.