

## Activities in History of Mathematics in Utrecht and Leiden in the year 2008

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### Personnel

Steven Wepster (SW): from January 1, 2008 - Dec. 31, 2008: 0,5 “Universitair Docent”, Department of Mathematics, UU

Dr Kim Plofker (KP) was a postdoctoral fellow from Sept. 1, 2004 - Sept. 1, 2006, at the Department of Mathematics, UU, sponsored by NWO. Some of her publications which were written in that period appeared in 2008 and are mentioned in the list of publications.

Liesbeth de Wreeede (LW): Jan. 1, 2008 - Dec. 31, 2008: Official (un-salaried) guest of the Mathematics Department (History of Mathematics Research Group), UU, 0.0 fte.

Jantien Dopper (JDo): Jan. 1, 2008 - Dec. 31, 2008: Ph.D. student (AIO) at the Department of Mathematics, UU.

Jeanine Daems (JDa): Jan. 1, 2008 - Dec. 31, 2008: Ph. D. student (AIO) at the Department of Mathematics, University of Leiden.

Hüseyin Şen (HS): M.Sc. student in History of Science, with specialism History of Islamic Science, working with JH.

Jan P. Hogendijk (JH), Jan. 1, 2008 - Dec. 31, 2008: Professor of History of Mathematics in Utrecht University (0,5 full professor, 0,3 associate professor) and in Leiden University (0,2 full professor). Note: JH was on leave from Feb.

1 - July 1; almost all of this time was spent in activities unrelated to History of Mathematics.

Henk Hietbrink, mathematics teacher at the Cals College in Nieuwegein, worked from Sept. 1, 2007 - August 31, 2009 for one day per week on a “teacher in research” program, funded by NWO, on the preparation of educational material on 17th-century Dutch mathematics for highschool students in mathematics. The project was jointly supervised by Prof. Dr. Jan van Maanen (Freudenthal Institute for Mathematics and Science Education) and JH.

The following students deserve special mention, because they have participated on a regular basis in teaching, travelling, giving lectures etc.

Mr. Hüseyin Şen, masterstudent History and Philosophy of Science,

Mr. Wilfred de Graaf, master student Mathematics and Physics,

Mr. Eric van Lit, bachelorstudent Mathematics, Arabic, and Liberal Arts and Sciences.

## International Service

JH was reader of the Ph.D. dissertation of Toke Knudsen, *The Siddhantasundara of Jnanaraja: A Critical Edition of Select Chapters with English Translation and Commentary*, Providence, R.I., USA, Brown University, May 2008.

JH was reader (“examinateur”) of the Ph.D. dissertation of Abdelmalek Bouzari: *La géométrie des coniques dans la tradition de l’Occident Musulman à travers le Kitāb al-Istikmāl [Livre de l’accomplissement] d’al-Mu’taman (m. 1085)*: Doctorat de l’Université des Sciences et Technologiques de Lille 1; public defence November 17, 2008.

JH is executive Member, Academie Internationale d’Histoire des Sciences

JH is a member of the editorial board of the following journals in the history of science:

- Ganita-Bharati (Delhi, ISSN 0970-0307),
- Istoriko-Matematicheski Issledovaniya (Moscow, ISBN 5-8037-0291-9),
- Suhayl (Barcelona, ISSN 1576-9372),
- Centaurus (Aarhus, ISSN 0008-8994),
- Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften (Frankfurt, ISSN 0179-4639),
- Historia Mathematica (Amsterdam-San Diego, ISSN 0315-0860),
- Ta’rikh-e Elm (Tehran, ISSN 1735-0573),
- Journal for the History of Arabic Science (Aleppo, ISSN 0379-2927),
- Early Science and Medicine (Leiden, ISSN 1383-7427).

## Publications

M. Bagheri, Kūshyār ibn Labbān's Account of Calendars in his Jāmi<sup>c</sup> Zīj, *Journal for the History of Arabic Science* 14 (2008), 69-114. ISSN 0379-2927 [Article based on Ph.D. dissertation in history of mathematics, and written in Utrecht, 2006]

JH: review of: *De Archimedes Codex: De geheimen van een opzienbarende palimpsest ontsluitd*. *Nieuwe Wiskrant* 27-3 (maart 2008), pp. 20-21.

JH: Ancient and modern secrets of Isfahan, *Nieuw Archief voor Wiskunde*, fifth series, 9 nr. 2 (june 2008), 121.

JH: Two beautiful geometrical theorems by Abu Sahl Kuhi in a 17th century Dutch translation, *Ta'rikh-e Elm: Iranian Journal for the History of Science* 6 (2008), 1-36 (ISSN 1735-0537).

JH: The Introduction to Geometry by Qusta ibn Luqa: Translation and Commentary, *Suhayl* 8 (2008), 163-221. ISSN 1576-9372.

S.A.Wepster, Van Ceulens veelhoeken en veeltermen, *Nieuwe Wiskrant* 28, sept. 2008, pp. 43-48.

## Lectures

January 5. Wilfred de Graaf and Eric van Lit: workshop: 'The Astrolabe'. Tehran University, History of Science Department.

January 5. JH: Iranian mathematics (3d-9th c. A.H.) and Dutch mathematics (16th-17th c. A.D.) and their various relationships. Tehran University, History of Science Department.

February 2. JH, Wiggert Loonstra: workshop: "Toen irrationale getallen nog geen getallen waren," Nationale Wiskundedagen, Noordwijkerhout. See <http://www.math.uu.nl/people/hogend/gelder.html>

Februari 19. JDo: "Dutch mathematicians quarreling through the Golden Age," AIO-colloquium.

March 1. JH: Lecture "Cirkels", at Ouderdag, A-Eskwadraat, Universiteit Utrecht.

March 20. SW, Lecture at Marbach. ADD TITLE.

March 19. JH, Exacte wetenschappen in de middeleeuws Islamitische cultuur", Rotterdams Natuurkundig Genootschap, Rotterdam.

April 4. JH: Lecture and discussion: Over echte en fictieve personages in Cohen's *Herscheping van de Wereld*: Ibn al-Haytham, al-Toesi, al-Kepler en al-Galilei. Boeksymposium Floris Cohen, *De herschepping van de Wereld*, Utrecht, Descartes Centre.

May 15. Lecture by Frans van Helden, Peter van Linden, "De Archimedes Codex", Leiden: Lunchcolloquium, De Sitter-Zaal (75 participants). (This was a presentation of the subject which they had worked on in the seminar History of Mathematics.)

August 4: Workshop "The astrolabe", by Wilfred de Graaf M. Sc, and Jules Lamers. Aleppo, Institute for the History of Arabic Science, in cooperation with

the Nederlands Instituut voor Academische Studies (Dutch Institute for Academic Studies) in Damascus. Invitation at [www.math.uu.nl/people/hogend/astrolabe-aleppo.jpg](http://www.math.uu.nl/people/hogend/astrolabe-aleppo.jpg)

August 22: Lectures at the Ludolph van Ceulen-day (see Organisation of Conferences)

November 6, 10:30-11:15: JDa, Lecture: Frankenheim's Discovery of the 32 Crystal Classes. Novembertagung on History of Mathematics, Holbaek, Denmark.

November 6, 15:45-16:30: JDo, Lecture: The Family Van Schooten: Mathematics in the Dutch republic in the 17th century. Novembertagung on History of Mathematics, Holbaek, Denmark

November 13, JH: Lecture: Colloquium: "From Masha'allah to Kepler: The Theory and Practice of Astrology in the Middle Ages and Renaissance", London: Warburg Institute.

November 20, SW, Lecture: 'On longitude and Tobias Mayer's lunar tables', Mathematics Department, Leiden university (Stafcolloquium).

November 29, JH, workshop: "Glazuur op een donut" (on the surface of a donut, including practical experiments on donuts) for highschool students, 4 times, total of 130 participants (and 130 donuts were cut up).

## Media

Jan. 6-8: The return flight from Tehran of the study trip to Iran was delayed because of bad weather. The 35 mathematics and physics students of Utrecht and Leiden university had to wait from Sunday, Jan 7, 3 am to Tuesday, Jan. 9, 5 pm in the International Khomeini Airport (with a short excursion back to the Residence of the Dutch Embassy in Tehran on Tuesday Jan, 8, 1 - 7 am). The story was reported on television in the evening news on January 7 on Nederland 1 - 3, and in all major national newspapers.

On Jan. 9, the Algemeen Dagblad (section Utrechts Nieuwsblad) printed a short article on the study tour and the research of the tour leader JH.

Jan. 18: the Utrecht University Newspaper (Ublad) 39 (2007-8), no. 15 printed on p. 7 a full-page article on the Iran study tour.

Oct. 10: RTL 4 broadcast a brief interview with JH on historical aspects of the lucky number 7 in their program Editie NL (18:15-18:35) (see <http://www.editie.nl>)

Oct. 12: NIO (Nederlands Islamitische Omroep) broadcast in its program Nioscoop a 30-minutes program on the influence of medieval Islamic science, with interviews of HS, JH and Dr Arnold Vrolijk (Leiden). Most of the interviews with HS were in Istanbul in the new museum of history of Islamic science. See <http://www.nioweb.nl>

Oct 29: The Leidsch Dagblad published (in the section Regio) an interview with JH written by Zainnab Hammou entitled "Moslims als Leermeesters".

Nov. 20: TVWest (Den Haag) broadcast a program on Islamic manuscripts in the Leiden University Library with Dr Arnold Vrolijk (Keeper of the Oriental

manuscripts) and JH, in the program “Het Andere Oog”, 18:00 and again at 20:00. See <http://www.rtvwest.nl>

Note: The numerous media activities by JDa in connection with the website [www.wiskundemeisjes.nl](http://www.wiskundemeisjes.nl) are not listed here.

## Visits

Jan. 6: JH with Eric van Lit and Wilfred de Graaf: Tehran, Institute for History of Science.

March 19-21: SW; Marbach.

May 22-25: JH: Istanbul, Turkey, official opening of the Museum for the History of Science and Technology in Islam, Gülhane Park (near Topkapi Palace).

July 7: JH: Dr. Dold-Samplonius, Heidelberg.

July 14-16: JH with JDa and Dr. Bagheri: Frankfurt, Institute for the History of Arabic-Islamic Science; and Prof. Dr. Moritz Epple, Historisches Seminar, J.W. Goethe-Universitaet.

Oct 27-29: JH with Eric van Lit: Frankfurt, Institute for the History of Arabic-Islamic Science.

Nov. 5-9: JDa and JDo: Novembertagung, Holbaek, Denmark.

Nov. 12-15: JH, Colloquium: “From Masha’allah to Kepler: The Theory and Practice of Astrology in the Middle Ages and Renaissance”, London: Warburg Institute.

Dec. 14: JH and HS: meeting with Prof. Ekmeleddin Ihsanoglu, Secretary of the Organisation of Islamic Conference, in Amsterdam.

## Visitors from Abroad

- Dr. Helaine Selin, Hampshire College, Amherst Mass. (July 19)
- Dr. Mohammad Bagheri, Tehran (July 11-15).
- Dr. Ali Rejali, Esfahan (July 15-19).
- Dr. Suhaymi, Dept. of Islamic Aqida, University of Malaysia (August 13)
- Dr. Kheradpajouh and four other members of the House of Mathematics, Esfahan (August 18, 19, 20).
- Dr. Benno van Dalen, Frankfurt (September 4)
- Prof. Dr. Henk J.M. Bos, Aarhus (Denmark), in the end of October and again on November 21 and 25.

## Organisation of Conferences

On August 22, Steven Wepster organized a one-day conference dedicated to the work of Ludolf van Ceulen (1540-1610). Location: University of Utrecht, Rupert building.

Speakers were: Dr. Steven Wepster (UU) on the contents of Van Ceulen's work *Vanden Circkel* (1596); Mrs. Jantien Dopper M.Sc. (UU) on Van Ceulen's exchanges on the quadrature of the circle in the 1580s and the motivation of *Vanden Circkel*; Dr. Liesbeth de Wreede (UU) on the relationship between Van Ceulen and Willibrord Snellius (1580-1626); Mrs. Meike Rouwenhorst (M.Sc. student, Utrecht) on the 100 geometrical problems of Van Ceulen and their solutions by Laurens Praalder (1711-1793); Charlotte Vlek (M. Sc. student, Groningen) on Van Ceulen's *Arithmetische en Geometrische Fondamenten* (published posthumously in 1615); Fokko Jan Dijksterhuis (UTwente) on the professional identity of a "mathematician" (wiskonstenaar) as it appears in polemical exchanges between Van Ceulen and others; Jan Hogendijk (UU) on Adriaan van Roomen (1561-1615), François Viète (1540-1603) and the importance of Van Ceulen for European history of mathematics.

The conference was attended by ca. 20 researchers and students from various universities in the Netherlands (Universities of Utrecht, Twente, Leiden, Groningen, University of Amsterdam).

## Honours and Awards

Jantien Dopper was awarded the masterscriptieprijs 2007 van het "Algemeen-Nederlands Verbond" (Internationale vereniging voor de Nederlandse taal en cultuur). Het optreden van de stadhouder Georg Schenk van Tautenburg in de gewesten Friesland, Overijssel en Groningen en Ommelanden (1521-1540)

JH was appointed as Adjunct Professor of the History of Science Department of the University of Tehran, beginning July 2008, for a period of two years.

SW received the "Basiskwalificatie Onderwijs" [ a teaching certificate of the University of Utrecht] in the fall of 2008.

Jeanine Daems received several awards and prizes (together with Mrs. Ionica Smeets) for their website [www.wiskundemeisjes.nl](http://www.wiskundemeisjes.nl) (a popular site on mathematics).

## Courses

- SW, spring 2008: seminar on "quarrels between mathematicians" in the 17th and 18th century in the Netherlands. Contributions of the following authors were studied: Willem Goudaen (fl. 1580), Ludolf van Ceulen (1540-1610), Nicolaus Petri Daventriensis = Claas Pietersz van Deventer (died 1601), Jacob Marcelis (fl. 1700), Klaas Najer (died 1717), Johan Stampioen d'Jonghe (1610-ca. 1690), Jacob van Wassenaer (1607-1682), Lieuwe Willemsz Graef (1652-1704), Bernhard Fullenius Jr. (1640-1707), Daniel Waeywel (1654-1736), Isaak de Graaf (1667-1743), Dirk Kruyk (fl. 1715-1735), Burgaert Hermanszoon Geesteveld (fl. 1660), Dirck den Hollander (fl. 1660-1690).
- JH, spring 2008: Seminar on History of Mathematics in ancient China, Utrecht, 12 students.

- JH, spring 2008: Seminar on History of Mathematics in antiquity, Leiden, 4 students.
- SW, fall 2008: History of Mathematics, Utrecht, 35 students.

### **Courses and workshops, not history related**

- From sept. 2007 - Jan. 2008, JH taught “Infinitesimalrekening” (WISB 131), to ca. 85 students. The course consisted of two plenary weekly lectures of two hours, and two tutorials of two hours in five groups (the tutorials were supervised by graduate students). 71 students passed the course (size: 7.5 ECTS).
- From Feb. 2008 to April 2008 JH taught “Inleiding Analyse” (WISB 111) to ca. 85 students. The course consisted of one plenary weekly lecture of two hours, and two tutorials of two hours in four groups. The second part of the course (April - June) was taught by Professor Odo Diekmann. (size: 7.5 ECTS). 61 students passed the course.
- From sept. 2008- jan. 2009, JH taught “Infinitesimalrekening” (WISB 131), attendance at the lectures was on average 115 students. 86 students have passed this course in january 2009. (size 7,5 ECTS)

SW taught the following workshops:

- June 6: cTWO Wiskunde D dag, workshop with Ferdinand Verhust
  - June 20: with Dr Roelof Bruggeman: Workshop complex numbers, at the special study day (studiedag) “Beta onder de Dom” for teachers at the vwo (highschool preparing for university).
  - organisation of Masterclass Fast Fourier Transform Oct 24–25, 2 days for advanced highschool students. In cooperation with Rob Bisseling, Albert-Jan Yzelman, and others.
  - Oct 29 with Prof. Gunther Cornelissen: Workshop Diophantine equations in the special day for highschool teachers in docentendag in the GQT-DIAMANT week
- From sept 2008 through oct 2008, SW taught a course on “Mathematics” in a General Science program, to on average 120 students.

### **M.Sc. theses, publications and other work by students in history of mathematics**

- Master thesis (Science and Teacher Education, Utrecht): Wiggert Loonstra, *Jan Hendrik van Swinden (1746-1823) en Jacob de Gelder (1765-1848): een meetkunstige vergelijking* [M. Sc. thesis for the master Science Teacher Education], august 2008. See [www.jacobdegelder.nl](http://www.jacobdegelder.nl). Supervised by JH, and Dr. Aad Goddijn.

- Charlotte Vlek, Masterthesis (EC, Groningen) "Ludolph van Ceulens Arithmetische en geometrische Fondamenten". Supervised by SW, read by JH.
- Bachelor thesis (Mathematics): Barbara Harzevoort, "De Veelhoeken van Ludolph van Ceulen, bespreking van hoofdstuk 2-8 uit VandenCirckel" [On chapters 2-8 of Ludolph van Ceulen, *Vanden Circkel*].
- Bachelor thesis (Mathematics): Eric van Lit, *The Measurement of the circle of Archimedes in Naṣīr al-Dīn al-Ṭūsī's revision of the middle books (tahrīr al-mutawassiḡāt)* (Arabic edition with English translation and commentary), October 2008. See [www.math.uu.nl/people/hogend/projects.html](http://www.math.uu.nl/people/hogend/projects.html)
- Essays written by (34) participants who passed the course "History of Mathematics", Utrecht, Fall 2007 (taught by SW). The course ended in February 2008:
  - Marij van Strien en Frida Feijen, "Het Pappus-probleem: Hoe Descartes algebra en meetkunde samenbracht".
  - Peter-Jan Blenkers en Tomas Molenaars, "1,I,1".
  - Jules Lamers en Roy Wang, "Daniel Waeywel's Demonstratie wegens de Quadratura Circuli: cirkelredeneringen in Nederland in het begin van de achttiende eeuw".
  - Hesther Boerefijn, "Regelmatige veelhoeken door de eeuwen heen [bordspel]".
  - Gijs Langenkamp en Rob Wesselink, "De laatste stelling van Fermat; bewijzen van Diophantus, Euler en Fermat."
  - Margot Rijnierse en Marianne de Nijs, "Archimedes, meer dan alleen 'Eureka' /".
  - Mattias Noback en Diana van de Weijenberg, "Aristarchus, Eratosthenes, Hipparchus en Ptolemeus: over de grootte en afstand van de aarde, de maan en de zon".
  - Emile Fokkema en Hugo Duijvesteijn, "De wiskundige en Nederlandse taal van Simon Stevin".
  - Rick Vedder en Charlotte Vlek, "Stevin in Perspectief: Stevins *Van de Deursichtighe* en de Wiskundige Theorie van het Perspectief".
  - Marieke de Vries en Danielle Remmelzwaan, "Goddelijke Wiskunde".
  - Merijn IJperlaan, "Egyptische en Babylonische getalnotatie".
  - Nadja Mosterman en Maartje van der Wiel, "Kinckhuysen in didactisch daglicht".
  - René Pannekoek en Mark IJbema, "Gödels onvolledigheidsstelling".
  - Rianne Verhoef en Marianne Hoksbergen, "Simon Stevin, een veelzijdig wetenschapper".
  - Eric van Dijk en Tessa van der Hoorn, "13".

- Marc Schwartz, “De bewijzen van Cardano”.
- Klaas-Jan Mussche, “Het fascinerende getal  $\pi$ ”.
- Sonja de Zwarte en Maarten Trimp, “De invoering van de Gregoriaanse Kalender”.
- Essays written by (11) participants of the course ”History of Mathematics”, Leiden, Fall 2007, taught by JH (essays turned in in early Spring 2008):
  - Floris Olsthoorn, Joris Weimar, “Chinese mathematics: The Nine Chapters on the Mathematical Art”.
  - Harm de Vries, Theo Horsmeier, “Getallen in de Griekse oudheid”.
  - Joost Michielsen, Michiel Kusters, “De ontwikkeling van de determinantrekening tussen 1820 en 1860”.
  - Ariyan Javan Peykar, Jasper van Wamelen, “Al-Kāshī en de derdegraads vergelijking.”
  - Wendy Ellens, “De opkomst van het perspectief in de vijftiende eeuwse Italiaanse schilderkunst.”
  - Fieke Offergelt, Hesther Rijngoud, ”Het wiskundekwartet” (this is actually a game).
- Essays written by participants of the Master seminar by SW, ”History of Mathematics”, Utrecht, Spring 2008 (all in Dutch):
  - Gijs Langenkamp, Wiggert Loonstra, “Problemen van en met Willem Goudaen.”
  - Ambi Oosterhout, Wilbert Ouburg, “Marcelis vs. Najer”
  - Elke Ballemans, Eric van Dijk, “De veelbewogen ruzie tussen Stampioen en Wassenaer”
  - Gijs Langenkamp, Wiggert Loonstra, “Graef en positiebepaling.”
  - Ambi Oosterhout, Wilbert Ouburg, “Waeywel vs. De Graaf.”
  - Ambi Oosterhout, Wilbert Ouburg, “Waeywel vs. Kruyk.”
  - Elke Ballemans, Eric van Dijk, “Geesteveld en Den Hollander.”

The essays were collected and edited by Bastian Michel in a reader “Verlagen van het seminarium over ruzies in de Wiskunde”, Utrecht, August 2008.

- Essays written by participants of the seminar supervised by JH, ”Exact Science in China before 1900” (WISM 483, 7.5 ECTS) Utrecht, Spring 2008 (all in Dutch): Note that the essays were put together, with introductory material also written by the students, in the reader “Wetenschap van het Midden. Meesterwerken in de oude Chinese wis- en sterrenkunde.” [Science of the Middle. Masterpieces of old Chinese mathematics and astronomy], edited by Dick van Dam.

- Lars Einarsen, Marleen Kooiman, “De Huainanzi: de filosofie van de vroege Han.” [The Huainanzi: a cosmological work of the early Han.]
- Danny Chan, Valentijn Karemaker, “Meetkunde in de Jiuzhang Suanshu en India.” [Geometry in the Nine Chapters and India]
- Leslie Molag, “Algebra van de Jiuzhang Suanshu en India.” [Algebra in the Nine Chapters and India]
- Egbert Rijke, Sietske Tacoma: “De Suan Shu Shu: zo oud dat het nieuw is.” [On the Suan Shu Shu, the oldest extant Chinese mathematical work]
- Frits Veerman, Sonja de Zwarte, “Op zoek naar de oorsprong van onze getallen.” [In search of the origin of our number system]
- Alje Boonstra, Dick van Dam, Maria Velema, “Ch’in’s reststelling” [Ch’in’s remainder theorem]
- Essays written by participants of the Leiden seminar ”History of Ancient Mathematics”, Utrecht, Spring 2008 (all in Dutch):
  - Peter van der Linden, Frans van Helden, De Archimedes-Codex.
  - Hesther Rijngoud, Rosa Runhardt, Pythagoreese getaltheorie.