

Alexander Raymond Jones

Curriculum Vitae (May, 2010)

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Education and Degrees:

Ph.D., 1985, Brown University. (History of Mathematics)

Dissertation: Book 7 of Pappus's *Collection*: Edition, translation, and commentary.' (Supervisor: G. J. Toomer).

B.A., 1981: University of British Columbia. (Honours Classics)

Positions held:

- 2008 – present** Professor of the History of the Exact Sciences in Antiquity, Institute for the Study of the Ancient World, New York University. Professor of Mathematics (Associated Faculty), Courant Institute, New York University.
- 1997 - 2008** Professor, Department of Classics and Institute for the History and Philosophy of Science and Technology (IHPST), University of Toronto. Full member of School of Graduate Studies. Appointment is 83% in Classics, 17% in IHPST.
- 1994 - 1997** Associate Professor (with tenure), Department of Classics and IHPST, University of Toronto. Full member of School of Graduate Studies. Appointment 83% in Classics, 17% in IHPST.
- 1992 - 1994** Assistant Professor, Department of Classics, University of Toronto. Full member (limited term) of School of Graduate Studies. Cross-appointed to IHPST.
- 1988 - 1992** Canada Research Fellow (Social Sciences and Humanities Research Council of Canada), IHPST, University of Toronto.
- 1987 - 1988** Post-doctoral Fellow (SSHRC), IHPST, University of Toronto
- 1986 - 1987** Kenneth O. May Fellow, IHPST, University of Toronto
- 1985 - 1986** Junior Byzantine Fellow, Dumbarton Oaks Research Library, Washington D.C.

Administrative positions:

2009 - present	Director of Graduate Studies, ISAW
1999 - 2002	Graduate Coordinator and Associate Chair, Department of Classics, University of Toronto.
2003 (Jan-June)	Acting Chair, Department of Classics, University of Toronto
2006-2008	Undergraduate Coordinator, Department of Classics, University of Toronto
2008–present	Director of Graduate Studies, Institute for the Study of the Ancient World, NYU

Visiting appointments:

2008	Visiting scholar, Université de Paris 7 Diderot, May-June.
2008	Francis Bacon Visiting Professor, California Institute of Technology, January-March
2005-2006	Member, School of Historical Studies, Institute for Advanced Study, Princeton
1998-1999	Fellow, Dibner Institute for the History of Science, M.I.T.
1996	Visiting Fellow, All Souls College, Oxford, Hilary Term

Honours:

CAENO Foundation Chronology Scholar, US\$2000, June, 2006
Francis Bacon Award, California Institute of Technology, US\$20000, March, 2006
Guggenheim Fellow, 2005-2006 (see below under Grants)
Fellow, Royal Society of Canada (elected 2000, inducted 2001)
Member, American Philosophical Society (elected 1998)
Pollock/Dudley Award, Dudley Observatory, 1993 (see below under Grants).
Corresponding Member, Académie internationale d'histoire des sciences (elected 1993)
Henry and Ida Schuman Prize, History of Science Society (1983).
University medal for arts and sciences, University of British Columbia (1981).

Professional Affiliations and Activities:

President, Commission for the History of Ancient and Medieval Astronomy, International Union of History and Philosophy of Science (2009-2017).

President, Canadian Society for the History and Philosophy of Mathematics (2006-2008).

Editorial board, *Journal for the History of Astronomy* (2008-present), *Archive for History of Exact Sciences* (1992-present), *Annals of Science* (1998-present), *SCIAMVS* (1999-present), *Phoenix* (1993-1996), *Isis* (1993-1995). Chair of editorial board for digital monographs series, Institute for the Study of the Ancient World (2010-present)

Corresponding Member, Académie internationale d'histoire des sciences (elected 1993).

SSHRC doctoral fellowships adjudication committee (2000-2002).

Conference co-organizer, A Mathematician's Journeys: Otto Neugebauer Between History and Practice of the Exact Sciences, Courant Institute and ISAW, NYU, November 12-13, 2010. (With C. Proust, J. M. Steele, and J. P. Britton)

Conference organizer, Reconstructing Ancient Texts: The 37th Annual Conference on Editorial Problems, University College, University of Toronto, November 2-3, 2001.

Committees:

Dept. of Classics: Executive (1999-2003 and 2006-2009, entails membership in most permanent committees of the department), Speakers Coordinator (2003-2005), Resources (1992-2001 and 2004-2005, convener 1993-1996), Curriculum (1992-1995), Graduate (1993-2004), Senior and Promotions (1997-2005), Greek literature search (1994-1995), Tenure committee (chair, 1999-2000), ROS positions search (2001-present, chair 2002-2003), CRC search (2001-2002), Tenure committee (2002), Promotion committee (2003, chair), Tenure committee (2003, chair), Greek history search (2004-2005), Roman literature and culture search (2006-2007).

I.H.P.S.T.: May fund (1991-present), Graduate appeals (1992-2000), Senior and Promotions (1997-present), History of Physics Search (1993-1995), History of Physics search (2004-2005).

School of Graduate Studies: Admissions and Programs Committee (2000-2002), Review and Directorial search, IHPST (1997-1998). SSHRC doctoral fellowship ranking (2004-2005)

Faculty of Arts and Science: Chair search, Classics (2001), Chair search, Classics (1994-1995), Jackman Program Committee (2002-2005).

University: Academic Board (2000-2003), Academic Policy & Programs (2000-2001), Research Advisory Board (1995-1998).

Other: Toronto School of Theology, Advanced Degree Council (2000-2001), Committee on Conference on Editorial Problems (2000-present).

Research interests and work in progress:

Mathematical and physical sciences and pseudosciences in antiquity, Middle Ages, and early modern Europe. Current work concerns astronomy and astrology in the ancient

Near East and the Greek world, the scientific work of Ptolemy, and Greek mathematical sciences in general. Papyrology, manuscript traditions and textual criticism.

Research Awards (last 5 years):

- 2005-2006** John Simon Guggenheim Memorial Foundation, Fellowship, 'Ptolemy's sciences,' US\$34,000
- 2002-2007** Social Sciences & Humanities Research Council of Canada, Standard Research Grant, 'Ptolemy and the science of his time', \$80,500.
- 2001-2002** SSHRC, Conference Grant, 'Reconstructing Ancient Texts: the 37th annual Conference on Editorial Problems', \$10,000.
- 1998-99** Resident Fellowship, Dibner Institute for the History of Science and Technology, Cambridge, Mass. Includes research stipend of US\$28,000.
- 1998-2002** Social Sciences & Humanities Research Council of Canada, Standard Research Grant, 'The composition and tradition of Ptolemy's *Geography*', \$28,300.
- 1996** Visiting Fellowship, All Souls College, Oxford.
- 1994-97** Social Sciences & Humanities Research Council of Canada, Standard Research Grant, 'Astronomy and astrology during the Roman period', \$32,000.
- 1993-94** Connaught Matching Grant, 'Astronomical and Astrological Papyri from Oxyrhynchus', \$9,500.
- 1993-94** Herbert C. Pollock/Dudley Award (Dudley Observatory, Schenectady, N.Y.), 'Astronomical and Astrological Papyri from Oxyrhynchus', US\$4,000.
- 1993-94** Norwood Travel Award (Univ. of Toronto), \$11,000.
- 1992-94** Connaught New Staff Grant (University of Toronto), 'Astronomy and Astrology 200 B.C. - A.D. 500', \$10,000.
- 1992-97** Startup Grant (Univ. of Toronto), \$5000 per year for 5 years.

Publications

Books and Monographs (sole or joint author):

(editor) *Ptolemy in Perspective: Use and Criticism of his Work from Antiquity to the Nineteenth Century*. Archimedes, vol. 23. Springer. 232 pp. (2010)

(with J. L. Berggren) *Ptolemy's Geography: The Theoretical Chapters*. Princeton University Press (2000). 232 pp.

Astronomical Papyri from Oxyrhynchus. Philadelphia (1999). Memoirs of the American Philosophical Society, vol. 233. 2 vols. in 1, xii + 368 pp., 471 pp.

(with M. W. Haslam, F. Maltomini, M. L. West, and others) *The Oxyrhynchus Papyri Volume LXV*. London, 1998. Egypt Exploration Society, Graeco-Roman Memoirs 85. 212 pp.

Ptolemy's first commentator. Philadelphia, 1990. Transactions of the American Philosophical Society, 80.7. 62 pp.

An Eleventh-century manual of Arabo-Byzantine astronomy. Amsterdam (Gieben), 1987. Corpus des astronomes byzantins, 3. 199 pp.

Pappus of Alexandria. *Book 7 of the Collection*. Edited with translation and commentary by Alexander Jones. 2 vols. Berlin, etc. (Springer Verlag), 1986. Sources in the History of Mathematics and the Physical Sciences, 8. viii + 748 pp.

Refereed Journal Articles:

The wrong planet. P. Berol. inv. 21226 revisited. *Archiv für Papyrusforschung* 55, 2009, 303-315.

(with T. Freeth, J. M. Steele, and Y. Bitsakis) Calendars with Olympiad display and eclipse prediction on the Antikythera Mechanism. *Nature* 454, 2008, 614-617.

An astronomical table from Medinet Madi (Narmuthis). *Analecta Papyrologica* 18–20, 2006–2008, 79–82.

Two astronomical tables from Oxyrhynchus based on Babylonian planetary theory. *Istituto papirologico "G. Vitelli," Comunicazioni* 7, 2007, 1–8.

IG XII, 1 913: An Astronomical Inscription from Hellenistic Rhodes. *Zeitschrift für Papyrologie und Epigraphik* 158, 2006, 104-110.

The Astronomical Inscription from Keskinotos, Rhodes. *Mediterranean Archaeology and Archaeometry* 6, 2006, 215-222.

The Keskinotos Astronomical Inscription: Text and Interpretations. *SCIAMVS* 7. 2006, 3-41.

Ptolemy's Ancient Planetary Observations. *Annals of Science* 63. 2006, 255-290.

(with D. Duke) Ptolemy's Planetary Mean Motions Revisited. *Centaurus* 47, 2005, 226-235.

Ptolemy's Canobic Inscription and Heliodorus' Observation Reports. *SCIAMVS* 6, 2005, 53-97.

A route to the ancient discovery of nonuniform planetary motion. *Journal for the History of Astronomy* 35, 2004, 375-386.

A Study of Babylonian Observations of Planets Near Normal Stars. *Archive for History of Exact Sciences* 58, 2003, 475-536.

- A Posy of *Almagest* Scholia. *Centaurus* 45, 2004, 69-78.
- Eratosthenes, Hipparchus, and the Obliquity of the Ecliptic. *Journal for the History of Astronomy* 33, 2002, 15-19.
- Pseudo-Ptolemy, *De Speculis*. *SCIAMVS: Sources and Commentaries in Exact Sciences* 2 (2001) 145-186.
- More Astronomical Tables from Tebtunis. *Zeitschrift für Papyrologie und Epigraphik* 136 (2001) 211-220.
- Studies in the Astronomy of the Roman Period IV: Solar Tables Based on a Non-Hipparchian Model. *Centaurus* 42 (2000) 77-88.
- Calendrica I: New Callippic Dates. *Zeitschrift für Papyrologie und Epigraphik* 129 (2000) 141-158.
- Calendrica II: Date Equations from the Reign of Augustus. *Zeitschrift für Papyrologie und Epigraphik* 129 (2000) 159-166.
- (with John P. Britton) A New Babylonian Model for Jupiter in a Greek Source. *Archive for History of Exact Sciences* 54 (2000) 349-373.
- A Likely Source of an Observation Report in Ptolemy's *Almagest*. *Archive for History of Exact Sciences* 54 (1999) 255-258.
- Geminus and the Isia. *Harvard Studies in Classical Philology* 99 (1999) 255-267.
- The Horoscope of Proclus. *Classical Philology* 93 (1999) 81-88.
- Two Astronomical Tables: P. Berol. 21240 and 21359. *Zeitschrift für Papyrologie und Epigraphik* 125 (1999) 201-205.
- (with W. Brashear) An Astronomical Table Containing Jupiter's Synodic Phenomena. *Zeitschrift für Papyrologie und Epigraphik* 125 (1999) 206-210.
- Notes on Astronomical Papyri. *Zeitschrift für Papyrologie und Epigraphik* 121 (1998) 203-210.
- Three Astronomical Papyri from Tebtunis. *Zeitschrift für Papyrologie und Epigraphik* 121 (1998) 211-218.
- Studies in the Astronomy of the Roman Period, III. Planetary Epoch Tables. *Centaurus* 40 (1998) 1-41.
- A Greek Papyrus Concerning Babylonian Lunar Theory. *Zeitschrift für Papyrologie und Epigraphik* 119 (1997) 167-172.
- On the Reconstructed Macedonian and Egyptian Lunar Calendars. *Zeitschrift für Papyrologie und Epigraphik* 119 (1997) 157-166.
- Babylonian Astronomy and its Legacy. *Bulletin of the Canadian Society for Mesopotamian Studies* 32 (1997) 11-16.
- Studies in the Astronomy of the Roman Period. II. Tables for Solar Longitude. *Centaurus* 39 (1997) 211-229.
- Studies in the Astronomy of the Roman Period. I. The Standard Lunar Scheme. *Centaurus* 39, 1997, 1-36.
- Two Astronomical Papyri Revisited. *Analecta Papyrologica* 6 (1994 [actually 1996]). 15pp.
- On the Planetary Table, Dublin TCD Pap. F. 7. *Zeitschrift für Papyrologie und Epigraphik* 107 (1995) 255-258.
- Peripatetic and Euclidean Theories of the Visual Ray. *Physis* 31 (1994) 47-76.
- An Astronomical Ephemeris for A.D. 140: P. Harris I.60. *Zeitschrift für Papyrologie und Epigraphik* 100 (1994) 59-63.
- The Date of the Astronomical Almanac Tab. Amst. inv. no. 1. *Chronique d'Égypte* 68 (1993) 178-185.
- A Second-Century Greek Ephemeris for Venus. *Archives Internationales d'Histoire des Sciences* 41 (1991) 3-12.
- The Adaptation of Babylonian Methods in Greek Numerical Astronomy. *Isis* 82 (1991) 441-453.
- Pliny on the Planetary Cycles. *Phoenix* 45 (1991) 148-161.
- Babylonian and Greek Astronomy in a Papyrus Concerning Mars. *Centaurus* 33 (1991) 97-114.
- Hipparchus's Computations of Solar Longitudes. *Journal for the History of Astronomy* 22 (1991) 101-125.

On some borrowed and misunderstood problems in Greek catoptrics. *Centaurus* 30 (1987) 1-17.

William of Moerbeke, the Papal Greek Manuscripts, and the *Collection* of Pappus of Alexandria in Vat. gr. 218. *Scriptorium* 40 (1986) 16-31.

A Greek Saturn Table. *Centaurus* 27 (1984) 311-317.

The Development and Transmission of 248-day schemes for lunar motion in ancient astronomy. *Archive for History of Exact Sciences* 29 (1983) 1-36.

Other Journal Articles:

The Legacy of Ancient Near Eastern Astronomy. *Bulletin of the Canadian Society for Mesopotamian Studies* 39, 2004, 15-20.

Refereed Book Chapters:

Ancient Rejection and Adoption of Ptolemy's Frame of Reference for Longitudes. *Ptolemy in Perspective*, ed. A. Jones. Archimedes 23. (2010) 11-44.

Mathematics, Science, and Medicine in the Papyri. In *Oxford Handbook of Papyrology*, ed. R. Bagnall. Oxford U. P. 2009. 338-357.

Euclid, the Elusive Geometer. In *Euclid and his Heritage*. Clay Mathematics Institute. 20 pp. (Forthcoming)

Ptolemy's *Geography*: a reform that failed. *Ptolemy's Geography in the Renaissance*, ed. Z. Shalev and C. Burnett. Warburg Institute. 20 typescript pp. (Forthcoming)

P.S.I. 1490–1495. (Editions of astronomical and astrological papyri, unsigned.) *Pubbliazioni della Società Italiana per la ricerca dei Papiri greci e latini in Egitto. Papiri greci e latini* 15, ed. V. Bartoletti et al., Firenze: Istituto papirologico "G. Vitelli", 2008, 132–164.

The Astrologers of Oxyrhynchus and Their Astronomy. *Oxyrhynchus: A City and its Texts*, ed. A. K. Bowman, R. A. Coles, N. Gonis, D. Obbink, and P. J. Parsons (=Egypt Exploration Society, Graeco-Roman Memoirs 93), London, 2007, 307-314.

On Greek Stellar and Zodiacal Date Reckoning. In J. M. Steele (ed.), *Calendars and Years: Time and Astronomy in the Ancient World*, Oxford: Oxbow Books, 2007. 149-167.

"In order that we should not ourselves appear to be adjusting our estimates... to make them fit some predetermined amount." In J. Z. Buchwald and A. Franklin, eds., *Wrong for the Right Reasons*. (= *Archimedes* 11), 2005, 17-39.

Ptolemy's mathematical models and their meaning. In M. Kinyon and G. van Brummelen, eds., *Mathematics and the Historian's Craft*. Springer, 2005, 24-42.

An *Almagest* before Ptolemy's? *Studies in the History of the Exact Sciences in Honour of David Pingree*, ed. C. Burnett. Brill. 2004. 129-136.

The Stoics and the Astronomical Sciences. *The Cambridge Companion to the Stoics*, ed. B. Inwood. Cambridge, 2003, 328-344.

L'Astronomia dopo Tolomeo (Astronomy after Ptolemy). *Storia della scienza*, Istituto della Enciclopedia Italiana. Vol. 1 (2001, appeared 2003), 979-987.

Babylonian Lunar Theory in Egypt: Two New Texts. *Under One Sky: Astronomy and Mathematics in the Ancient Near East*, ed. J. M. Steele and A. Imhausen. *Alter Orient und Altes Testament* 297. Münster, Ugarit-Verlag, 2002, 167-174.

Pappus' Notes to Euclid's *Optics*. *Ancient and Medieval Traditions in the Exact Sciences*, ed. P. Suppes, J. Moravcsik, and H. Mendell. Stanford, 2001, 49-58.

- Uses and Users of Astronomical Commentaries. *Commentaries – Kommentare*, ed. G. W. Most (Aporemata 4), Göttingen, 1999, 147-172.
- A Classification of Astronomical Tables on Papyrus. *Ancient Astronomy and Celestial Divination*, ed. N. M. Swerdlow, MIT Press, Cambridge (USA), 1999, 299-340.
- Babylonian astronomy and its Greek Metamorphoses. *Tradition, Transmission, Transformation*, ed. F. J. Ragep and S. Ragep, Leiden, 1996, 139-155.
- Later Greek and Byzantine Astronomy. *Astronomy Before the Telescope*, ed. C. Walker, London, 1996, 98-109.
- The Place of Astronomy in Roman Egypt. *The Sciences in Greco-Roman Society*, ed. T. D. Barnes, Edmonton, 1995. (= *Apeiron* 27.4, 1995) 25-51.
- Evidence for Babylonian Arithmetical Schemes in Greek Astronomy. *Die Rolle der Astronomie in den Kulturen Mesopotamiens*, ed. H. D. Galter (*Grazer Morgenländische Studien* 3).. Graz, 1993. 77-94.

Articles in Reference Works (refereed):

- Articles, 'Eratosthenes' (2000 words), 'Ptolemy' (2000 words), and shorter articles 'Abram', 'Anoubion', 'Antigonos', 'Antiochos', 'Astrologer of 379', 'Attalos', 'Campestris', 'Diodoros', 'Dionusios', 'Dionusodoros', 'Dorotheos', 'Hephaistion', 'Hermeias', 'Imbrasios', 'Ioulianos', 'Keskintos', 'Khairmon', 'Krinas', 'Lasos', 'Manethon', 'Manilius', 'Maximus', 'Astrologus Michiganensis', 'Moderatus', 'Nikomakhos', 'Odapsos', 'Paulos', 'Perseus', 'Philippos', 'Philonides', 'Pitenios', 'Protagoras', 'Rhetorios', 'Salmeskhoiniaka', 'Serapion of Alexandria', 'Serapion, astron.', 'Seuthes', 'Suros', 'Theodosios', 'Theon', 'Tarutius', 'Timaios', 'Vettius Valens', 'Zenodoros' (total 6000 words). In P. T. Keyser and G. L. Irby-Massie, ed., *Encyclopaedia of Ancient Natural Scientists*, Routledge, 2009.
- Articles, 'Apollinarius' (500 words), 'Hipparchus' (1500 words), 'Leptines' (500 words), 'Marinus of Tyre' (500 words), 'Ptolemy' (4000 words), 'Timocharis' (500 words). In *New Dictionary of Scientific Biography*, 2008.
- Article, "Ptolemy" (1000 words). In D. Buisseret, ed., *Oxford Companion to World Exploration*. Oxford: Oxford U. P., 2006.
- Articles, 'Pappus of Alexandria' (600 words), 'Hipparchus' (1800 words), 'Ptolemy' (1800 words), 'Ptolemaic System' (600 words). *Encyclopaedia Britannica*.
- Articles, 'Babylonian Astronomy', 'Hipparchus', 'Ptolemy' (2500 words each). *Encyclopedia of Astronomy and Astrophysics*. Institute of Physics. 2001.
- Article, 'Astronomy'. *Late Antiquity. A Guide to the Postclassical World*, ed. G. Bowersock, P. Brown, and O. Grabar. Cambridge (U.S.A.), 1999. 1000 words.
- Articles on 'Greek Mathematics', 'Greek Applied Mathematics', 'Later Greek and Byzantine Mathematics', in *Encyclopedia of the History and Philosophy of the Mathematical Sciences* ed. I. Grattan-Guinness, London (Routledge), 1993, vol. 1, 46-69.

Articles in Trade Periodicals:

- The Horoscope Casters. *Archeology Odyssey* 3.6, November/December 2000, 6-7.
- Une tradition astronomique venue de Babylone. *Les Cahiers de science et vie* 55, February 2000, 28-33

Reviews:

- E. Robson, *Mathematics in Ancient Iraq*. Princeton, 2008.
 • Review in *British Journal for the History of Science* (forthcoming).
- K. Plofker, *Mathematics in India*. Princeton, 2010.
 * Review in *Journal for the History of Astronomy* (forthcoming).
- F. Rochberg, *The Heavenly Writing*. Cambridge, 2004.
 • Essay review in *Journal for the History of Astronomy* 37, 2006, 353-356.

- L. Taub, *Ancient Meteorology*. London, 2003.
 • Review in *Early Science and Medicine* 10, 2005, 109-110.
- R. Netz, *The Works of Archimedes* v. 1. Cambridge, 2004.
 • Essay review in *Notices of the American Mathematical Society* 52, 2005, 520-525.
- J. Evans, *The Theory and Practice of Ancient Astronomy*. New York, 1998.
 • Review in *American Journal of Physics* 68, 2000, 296.
- E. Reiner and D. Pingree, *Babylonian Planetary Omens Part Three*. Groningen, 1998.
- F. Rochberg, *Babylonian Horoscopes*. Philadelphia, 1998.
- N. M. Swerdlow, *The Babylonian Theory of the Planets*. Princeton, 1998.
 • Essay review in *Early Science and Medicine* 5, 2000, 110-113 [printed defectively in 4 (1999) 251-255].
- L. Brack-Bernsen, *Zur Entstehung der babylonischen Mondtheorie*. Stuttgart, 1997.
 • Review in *Journal of Near Eastern Studies* (forthcoming).
 • Review in *Centaurus* (forthcoming).
- A. Tihon and R. Mercier, *Georges Gémiste Pléthon: Manuel d'Astronomie*. Louvain-la-Neuve, 1997.
 • Review in *Isis* 90, 1999, 802-803.
- J. Mansfeld, *Prolegomena Mathematica: From Apollonius of Perga to the Late Neoplatonists*. Leiden, 1998.
 • Review in *Journal for History of Astronomy* 30, 1999, 315-316.
- M. R. Wright. *Cosmology in Antiquity*. London, 1995.
- T. Barton. *Ancient Astrology*. London, 1994.
 • Review in *International Journal of the Classical Tradition* 4, 1998, 456-460.
- A. Tihon. Le 'Grand Commentaire' de Théon d'Alexandrie aux Tables Faciles de Ptolémée. Vol. 2. Vatican City, 1991.
 • Review in *Centaurus* (forthcoming).
- A. C. Bowen, ed. *Science and Philosophy in Classical Greece*. New York, 1991.
 • Review in *Ancient Philosophy* (forthcoming).
- D. Baccani. *Oroscopi greci: documentazione papirologica*. Messina, 1992.
 • Review in *Journal for the History of Astronomy* 28 (1997) 89-90.
- A. Lejeune, *L'Optique de Claude Ptolémée*. Leiden, 1989.
 • Review in *Annals of Science* 50, 192-194.
- R. Leurquin. *Théodore Méliésiote: Tribiblos Astronomique*. Vol. 1. Amsterdam, 1990.
 • Review in *Journal for the History of Astronomy* 23, 218-220.
- A. J. Sachs & H. Hunger. *Astronomical Diaries and Related Texts from Babylonia*. Vols. 1 and 2. Vienna, 1988-1989.
 • Essay review in *Ancient Philosophy* 12, 424-431.
- H. Hunger and D. Pingree, *MUL.APIN: An Astronomical Compendium in Cuneiform*. Horn, 1989.
 • Review in *Journal for the History of Astronomy* 22, 327-329.
- Ibn al-Haytham, *The Optics of Ibn al-Haytham: Books I-III: On Direct Vision*. Translated and edited by A. I. Sabra. 2 pts. London, 1989.
 • Review in *Isis* 82 (1991) 724-726.
- D. J. O'Meara. *Pythagoras Revived*. Oxford, 1989.
 • Review in *Isis* 82 (1991) 364-365.
- B. L. van der Waerden. *Die Astronomie der Griechen: Eine Einführung*. Darmstadt, 1988.
 • Review in *Isis* 81 (1990) 331-32.
- G. E. R. Lloyd. *The Revolutions of Wisdom*. Berkeley, 1987.
 • Review in *Phoenix* 44 (1990) 97-98.
- E. J. Dijksterhuis. *Archimedes*. Princeton, 1987.
 • Review in *American Scientist* 77 (1989) 302.

- D. E. Pingree. *The Astronomical Works of Gregory Chioniades*. v. 1. Amsterdam, 1985-86.
 • Review in *Centaurus* 31 (1988) 319-20.
- J. Mogenet & A. Tihon. *Le 'Grand Commentaire' de Théon d'Alexandrie aux Tables Faciles de Ptolémée*. Vol. 1. Vatican City, 1985.
 • Review in *Centaurus* 29 (1986) 243-45, and in *Isis* 78 (1987) 120-21.
- J. Mogenet, A. Tihon, et al. *Nicéphore Grégoras: Calcul de l'éclipse de Soleil du 16 juillet 1330*. Amsterdam, 1983.
 • Review in *Centaurus* 28 (1985) 72-73.
- W. Hübner. *Die Eigenschaften der Tierkreiszeichen in der Antike*. Wiesbaden, 1982. *Zodiacus Christianus*. Königstein, 1983.
 • Review in *Archives internationales d'histoire des sciences* 35 (1985) 482-83.

Papers presented at meetings and symposia:

- The Dial Inscriptions of the Antikythera Mechanism. Whipple Museum Conference: The Antikythera Mechanism, A Timely Update, Cambridge, February 6, 2009.
- Parapegma Puzzles: reconstructing Greek documents on stellar risings and settings. Center for International Research in the Humanities and Social Sciences (CNRS UMI 3199), New York University, Inaugural Workshop on Early Mathematics, New York, November 25, 2008.
- Recent Research on the Antikythera Mechanism. Third Regensburg Workshop on Babylonian Astronomy, University of Durham, Durham, U.K., May 30, 2008.
- Selection of papyri and related astronomical documents. Seminar de lecture de textes mathématiques, REHSEIS, Université de Paris 7, Paris, May 21, 2008.
- Hipparchus' Polemical Commentaries. Seminar "Le genre des commentaires dans les textes scientifiques anciens," REHSEIS, Université de Paris 7, Paris, May 19, 2008.
- The Antikythera Mechanism and Hellenistic Astronomy. Seminar d'histoire des mathématiques: Les mathématiques grecques anciennes et leur postérité, Centre Louis Gernet, INHA, Salle Benjamin, Paris, May 17, 2008.
- From Tupsar to Astrologos: Babylonian-Greek interactions in the Astral Sciences. Seminar "Circulations de connaissances astronomiques dans les traditions anciennes," REHSEIS, Université de Paris 7, Paris, May 13, 2008.
- Mathematical modelling and the Antikythera Mechanism. Canadian Mathematical Society, Toronto, Dec. 11, 2006.
- The Antikythera Mechanism as an Artifact of Hellenistic Astronomy. Decoding the Antikythera Mechanism, Athens, Nov. 30-Dec. 2, 2006.
- Merely an Aberrant Development? How much did knowledge of Babylonian astronomy affect Greek astronomy? David Pingree Memorial Seminar, Leiden, May 29-30, 2006.
- Problems in Hellenistic Astronomy. Radcliffe Workshop on Hellenistic Science and Scholarship, Cambridge, MA, May 11-13, 2006.
- The Astronomical Inscription from Keskinto, Rhodes: A New Edition and Interpretations. Société Européenne pour l'astronomie dans la culture (SEAC), Rhodes, April 7-10, 2006.
- The Euclid Enigma. Canadian Mathematical Society, Victoria, B.C., Dec. 9-12, 2005.
- Euclid, the Elusive Geometer. Euclid and his Heritage. Clay Mathematics Institute, Oxford, Oct. 7-8, 2005.
- Euclides Analyticus. Conference: *Ars Analytica: The Beginnings of a new Geometry*. Scuola Normale Superiore, Pisa: Centro di Ricerca Matematica Ennio de Giorgi, September 16-17, 2005.
- The Astronomical Inscription from Keskinto (Rhodes). Seventh Biennial History of Astronomy Workshop, Notre Dame University, July 7-10, 2005.

- The Astronomy of the Keskinto Inscription. Special Workshop on Ancient Mathematical Astronomy, Notre Dame University, July 6, 2005.
- Enigmas of the Keskinto Astronomical Inscription. Canadian Mathematical Society, Waterloo, Ontario, June 4-6, 2005.
- Patterns of deduction in Ptolemy's *Almagest*. Canadian Mathematical Society, winter meeting, Montreal, Dec. 12, 2004.
- Deductive structures in Ptolemy's astronomy. Physics and Mathematics in antiquity, Leiden, June 18, 2004.
- A Study of Babylonian observations of lunar normal-star passages. From Observation to Theory: the 2nd Regensburg workshop on Babylonian astronomy, Amsterdam, May 27, 2004.
- Ptolemy's Mathematical Tones. Canadian Mathematical Society meeting, Vancouver, December 8, 2003.
- Ptolemy's Geography: A User's Guide. Conference on Ptolemy's Geography in the Renaissance, Warburg Institute, 27 June, 2003.
- The Legacy of Ancient Near Eastern Astronomy. Skywatchers of the Ancient Near East: Symposium sponsored by the Canadian Society for Mesopotamian Studies and the Society for the Study of Egyptian Antiquities, 8 February, 2003.
- On Normal Star Passages of Planets. Workshop on the Atypical Astronomical Cuneiform Texts, Universität Regensburg, 24 October, 2002.
- The Astronomical Papyri of Oxyrhynchus. Babylonische Astronomie (public conference on Babylonian astronomy), Universität Regensburg, 23 October, 2002.
- Sign Entries and Longitudinal Frame of Reference in Babylonian and Greek Astronomy. Workshop on Babylonian Astronomy, Brown University, 28 June, 2002.
- Ptolemy's Map. Reconstructing Ancient Texts: The 37th Annual Conference on Editorial Problems, University of Toronto, 3 November, 2001.
- How Much of Babylonian Mathematical Lunar Theory was Known in Greek, and in what Form? Under One Sky: Astronomy and Mathematics in the Ancient Near East, British Museum, 27 July, 2001.
- Babylonian Mathematical Astronomy in some Greek Papyri. Conference on the History and Philosophy of Greek Mathematics, Les Treilles (France), 21 July, 1998.
- The Astrologers of Oxyrhynchus. British Academy Symposium, Oxyrhynchus: A city and its texts, Oxford, 18 July, 1998.
- The Frame of Reference of Greek Astronomical Papyri. Canadian Society for the History and Philosophy of Mathematics, Annual Meeting (Ottawa), May 30, 1998.
- The Horoscope of Proclus. Classical Association of Canada, Annual Meeting (Ottawa), May 29, 1998.
- Astral Omens and Incantations in Ptolemaic and Greco-Roman Egypt. Chicago-Stanford Seminar on Hellenistic Egypt, Third meeting: Priests, Magicians and Incantations in Hellenistic Egypt. University of Chicago, November 8, 1997.
- Uses and Users of Astronomical Commentaries in Antiquity. Heidelberger Kolloquium, Historische und methodologische Aspekte der Kommentierung von Texten, Universität Heidelberg, July 4-6 1997.
- A Classification of Astronomical Tables on Papyrus. Dübner Institute for the History of Science and Technology, Workshop on Ancient Astronomy and Celestial Divination, M.I.T., May 8, 1994.
- The Place of Astronomy in Roman Egypt. Colloquium on The Sciences in Greco-Roman Society, Department of Classics, University of Toronto, April 9, 1994.
- Assimilation and Adaptation of Babylonian Astronomy in the Hellenistic World. Science and Cultural Exchange in the Premodern World, University of Oklahoma (Norman), February 26, 1993.
- New Evidence for Babylonian Methods in Greek Astronomy. 3. Grazer morgenländisches Symposium (Graz, Austria), September 23-27, 1991.

- Recovering Astronomical Tables from Greek Papyri. Canadian Society for the History and Philosophy of Mathematics, Annual Meeting (Kingston), May 28, 1991.
- Papyri as Evidence of the Astronomy of the Roman Period. Classical Association of Canada, Annual Meeting (Kingston), May 26, 1991.
- The Visual Ray in Peripatetic Optics Conference on the History of Optics: The Transmission and Transformation of a Discipline, (North Andover, Massachusetts), May 30 - June 3, 1990.
- Adaptations of Babylonian Methods in Greek Astronomy. History of Science Society, Annual Meeting (Gainesville, Florida), October 27, 1989.
- Eutocius, Preserver of Greek Scientific Texts. CAC, Annual Meeting (Québec), May 27, 1989.
- Arithmetical Methods in Hipparchus's Astronomy. Canadian Society for the History and Philosophy of Science, Annual Meeting (Québec) May 29, 1989.
- Pappus's Notes to Euclid's *Optics*. CSHPM, Annual Meeting (Québec), May 30, 1989.
- On Babylonian elements in Greek planetary theory before Ptolemy. Colloquium on Mesopotamian Astronomy and Astrology (British Museum, London). July 2, 1987.
- On the Bobbio mathematical fragments. 17th Int. Byzantine Congress (Washington, D.C.). August 7, 1986.
- The paradoxical mirrors of Anthemius. *Dumbarton Oaks* (Washington, D.C.). December 3, 1985.
- Making sense of Pappus's *Collection*. HSS Annual Meeting (Bloomington, Indiana). November 1, 1985.
- The manuscript transmission of Pappus's *Collection*. Workshop on the History of Mathematics. History of Science Dept., Harvard University. April 15, 1984.

Invited Lectures, Colloquia, Seminars:

- Greek astronomers and the ancient public. Webster Memorial Lecture, Archeological Institute of America. Adler Planetarium, Chicago, September 23, 2009. SUNY Albany, February 10, 2010. University of Oklahoma, March 11, 2010.
- The Antikythera Mechanism. A Century of Research, and Beyond. Brookhaven National Laboratory. April 28, 2009.
- Gears For the Greeks. New York Academy of Sciences, History and Philosophy of Science Section. October 22, 2008.
- Many Transmissions. Mesopotamian Astronomy in Greek Science and Society. Centre for the Study of the Ancient Mediterranean and the Near East, Durham University, Durham U.K., May 29, 2008.
- Eternal Tables and Cosmic Cycles: A Lost Tradition in Greek Astronomy. Department of Greek and Roman Studies, University of Calgary. March 9, 2007.
- Late Hellenistic Astronomy: Public Faces and Interior Mechanisms. Department of Classics, Brown University. February 22, 2007.
- Locus Theorems in Ancient Greek Geometry. Adelphi University: Mathematics Dept., Pohle Seminar in the History of Mathematics. March 1, 2006.
- Locus Theorems in Ancient Greek Geometry. University of British Columbia, Dept. of Mathematics, Colloquium. December 14, 2005.
- Publishing Science on Stone: An astronomical inscription from Hellenistic Rhodes. Columbia University, Center for the Ancient Mediterranean. December 2, 2005.
- Publishing Science on Stone. Bryn Mawr, Dept. of Physics and Classics Program, Class of 1902 Lecture. November 4, 2005.
- Pappus' Collection and the European Rediscovery and Reconstruction of Greek Mathematics. Series of four lectures. Scuola Normale Superiore, Pisa: Centro di Ricerca Matematica Ennio de Giorgi, September 12-15, 2005.

- Ptolemy's Great Deduction. New York Academy of Sciences, History and Philosophy of Science Section. May 25, 2005.
- The Keskinio Inscription and Late Hellenistic Astronomy. Seminar, Dept. of Classics, University of Toronto, March 11, 2005.
- Ptolemy on the interplay of observation and reasoning. Brown Bag research seminar, Science and Technology Studies, York University, Jan. 18, 2005.
- Planetary Science in the Greco-Roman World. University of Toronto Astronomy and Space Exploration Society, Nov. 25, 2004.
- Ptolemy's Great Deduction. Committee on the History and Philosophy of Science, University of Colorado, Nov. 15, 2004.
- From Babylon to Alexandria. Royal Astronomical Society of Canada, Toronto, 2 April, 2003.
- Themes and Methods in Greek Geometrical Optics. Visual Literacies series, Dept. of Classics, Stanford University. May 24, 2001.
- Ptolemy: Lover of Truth? Colloquium, History of Science and Technology, University of Minnesota. February 25, 2000.
- Astrology in Roman Egypt: Untangling the Threads. Seminar (series: Experts and Expertise in the Ancient World), Institute of Classical Studies, University of London, October 21, 1999. Seminar (series: Space), Classics Faculty, University of Cambridge, October 22, 1999.
- Planetary Observations from Babylon, Egypt, and (maybe) Rome. I.H.P.S.T. Colloquium, University of Toronto, October 13, 1999.
- Mathematical Models and Phenomena in Ancient Astronomy. Invited plenary speaker. Joint Meeting, Canadian Society for the History and Philosophy of Mathematics/British Society for the History of Mathematics, Toronto, July 15, 1999.
- Predicting by Numbers: Babylonian Astronomy among the Greek Astrologers. Seminar on Science, Ethics, and Public Policy, California Institute of Technology, Pasadena, March 4, 1999.
- Superstitious flotsam of the Near East: astronomical texts from the astrologers of Egypt. Very Early Science Working Group, Dibner Institute for the History of Science and Technology, Cambridge, USA, November 30, 1998.
- Ptolemy's Geography in the Manuscripts, and Before Them. Colloquium, Dibner Institute for the History of Science and Technology, Cambridge, USA, September 15, 1998.
- Ancient mathematics: lost and found. University of Toronto Mathematics Association, June 6, 1998.
- Astral omens in Greco-Roman Egypt. Classics seminar, University of Toronto, October 31, 1997.
- Babylonian astronomy in Greek: the new evidence. I.H.P.S.T. colloquium, University of Toronto, January 22, 1997.
- Greek mathematics, emulated and applied. Invited lecture, Canadian Society for the History and Philosophy of Mathematics, Brock University, May 30, 1996.
- Astronomical Papyri from Oxyrhynchus: A Sampler. All Souls Visiting Fellows' Colloquium, All Souls College (Oxford), February 27, 1996.
- Astronomical Papyri of the Roman Period. Late Roman Seminar, Wolfson College (Oxford), January 30, 1996.
- A new astronomical text from the reign of Trajan. Classics seminar, University of Toronto, December 8, 1995.
- New light on the astronomy of the Roman period. I.H.P.S.T. colloquium, University of Toronto, November 15, 1995.
- Astronomy in the Service of Astrology: the Sciences of the Heavens in Roman Egypt. Chauncey Leake Lecture, Department of History of Science, University of Wisconsin (Madison), September 20, 1995.
- Callippic Periods and Egyptian Calendar Reform. Classics seminar, University of Toronto, February 24, 1995.

- Ptolemy and Marinus: Geographers of the Roman Empire. Ontario Classical Association meeting, Toronto, Nov. 5, 1994.
- Babylonian Astronomy and its Legacy. Lecture, Canadian Society for Mesopotamian Studies, Toronto, February 9, 1994.
- Planetary Phenomena and Planetary Theories in Ancient Astronomy. Colloquium, History of Science Department, Harvard University, November 16, 1993.
- From Omens to Orbits: Astronomy and Astrology in the Ancient World. Professional development day lecture, Toronto Board of Education, November 5, 1993.
- Greek World Maps and Exploration. Gifted programme, Western Technical and Commercial Secondary School (Toronto), February 13, 1993.
- Peripatetic and Euclidean Ways of Seeing. Classics seminar, University of Toronto, November 20, 1992.
- From Omens to Orbits. Gresham School, Holt, Norfolk, England. February 21, 1992.
- Astrological Practice and its Relation to Astronomy in Antiquity. Program in History of Science, Princeton University. December 3, 1991. University of Chicago, May 7, 1992. Minnesota Seminar in the History of Science and Technology, University of Minnesota. May 8, 1992.
- Greek Horoscopes. Seminar in History and Philosophy of Mathematics and Mathematics Education, York University. November 22, 1991. Seminar, Dept. of Mathematics and Statistics, Acadia University. January 31, 1992.
- The Planetary Phases in Early Astronomy: Observation, Prediction, and Theory. I.H.P.S.T. Colloquium, University of Toronto. October 2, 1991.
- The Origins of Greek Numerical Astronomy. Program in Classics, Philosophy, and Ancient Science, University of Pittsburgh, March 22, 1991.
- The Mathematical Collection of Pappus of Alexandria. Landelijke colloquia geschiedenis en maatschappelijke functie van de wiskunde (Mathematisch instituut, Rijksuniversiteit Utrecht). May 26, 1987.
- The editing of scientific texts in late antiquity. Classics Seminar, University of Toronto. March 20, 1987.
- The astronomy of the Greek astrologers. I.H.P.S.T. Colloquium, University of Toronto. February 26, 1987