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34

ARATUS: PHAENOMENA

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ARATUS  
PHAENOMENA

EDITED WITH INTRODUCTION,  
TRANSLATION AND COMMENTARY  
BY

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Christchurch, New Zealand*



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FOR  
MARGARET

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## PREFACE

Thirty years ago, when I discussed with the late Professor Brink my thoughts about doing some work on Aratus, I was inspired by his immediate suggestion that I should undertake an edition of the *Phaenomena* with full introduction and commentary, in view of the growing interest in Hellenistic poetry and the lack of a major edition of this poem. I was fortunate again several years later to have the benefit of his advice and encouragement in response to my sending him a sample of commentary on a hundred lines. At the same time he passed on to me a list of helpful comments from Professor Sandbach. Over the last eight years I have benefited from a wide range of critical comments from Professor Reeve, who also suggested additional material to clarify parts of the scientific background, and put forward new interpretations of the text for me to consider. The lively interest he has shown in all aspects of this widely ignored poem has been very rewarding and helpful. I am also indebted to Professor Diggle for a long list of critical comments and additional references that I would otherwise have missed. This highly innovative poem has been a victim of many misunderstandings, and only selected problems have been adequately discussed in the journals and brief commentaries. I have therefore set out at some length the interpretations and preferred textual readings of different scholars before giving my own conclusions and preferences. I owe a great deal, of course, to those few of my contemporaries who have written on Aratus, most particularly to Jean Martin for his work on the history of the text (1956) and his valuable edition of the scholia (1974). Finally I am deeply grateful to the Cambridge University Press for accepting my typescript and patiently dealing with its many problems.

Christchurch, NZ, July 1996

D. A. K.



## BIBLIOGRAPHY AND ABBREVIATIONS

Periodicals are abbreviated as in *L'Année Philologique*, Greek and Latin authors generally as in LSJ and *OLD* respectively.

### I. THE *PHAENOMENA*

#### (a) Editions

- |           |   |
|-----------|---|
| Aldus     | Aldus Manutius Romanus, Ἄρατου Σολέως Φαινόμενα μετὰ σχολίων, with Julius Firmicus, Manilius, the <i>Aratea</i> of Germanicus, Cicero and Avienius, the <i>Sphaera</i> of Proclus (Venice 1499).  |
| Ceporinus | Jacobus Ceporinus, Διονυσίου Οἰκουμένης περιήγησις, Ἄρατου Φαινόμενα, Πρόκλου Σφαῖρα, <i>cum scholiis</i> Ceporini, Gr. et Lat. (ap. Joannem Bibelium, Basiliae 1523). The Latin translation is not by Ceporinus, but is an anonymous version adopted by him. |
| Morel     | Guillaume Morel, Ἄρατου Σολέως Φαινόμενα καὶ Διοσημεῖα, Θέωνος σχόλια, Λεοντίου μηχανικοῦ περὶ Ἀρατείας σφαίρας (Paris 1559).   |
| Stephanus | H. Stephanus, <i>Poetae graeci principes heroici carminis et alii nonnulli</i> ; pp. 288–317 Ἄρατου Σολέως Φαινόμενα (Paris 1566).  |
| Grotius   | Huig van Groot, <i>Syntagma Arateorum</i> (Leiden 1600).  |
| Fell      | John Fell, Ἄρατου Σολέως Φαινόμενα καὶ Διοσημεῖα, Θέωνος Σχόλια, Ἐρατοσθένους Καταστερισμοί (Oxonii 1672).  |
| Buhle     | Johannes Theophilus Buhle, <i>Arati Solensis Phaenomena et Diosemea, graece et latine ad codd. mss. et optimarum edd. fidem recensita</i> (vol. 1, Lipsiae 1793).   |
| Matthiae  | F. C. Matthiae, <i>Arati Phaenomena et Diosemea, quibus subiciuntur Eratosthenis Catasterismi. Dionysii Orbis Terrarum Descriptio</i> (Francofurti ad Moenum 1816).   |
| Voss      | Johann Heinrich Voss, <i>Des Aratos Sternerscheitungen und Wetterzeichen</i> , übersetzt und erklärt (Heidelberg 1824).   |

## BIBLIOGRAPHY AND ABBREVIATIONS

- Buttmann Philip Buttmann, *Arati Phaenomena et Diosemea cum annotatione critica* (Berlin 1826).
- Bekker *Aratus cum Scholiis recognovit* Immanuel Bekkerus (Berolini 1828).
- Koechly *Arati Phaenomena et Prognostica rec.* A. Koechly in *Poetae Bucolici et Didactici* ed. Duebner (Paris 1851).
- Maass *Arati Phaenomena recensuit et fontium testimoniorumque notis prolegomenis indicibus instruxit Ernestus Maass* (Berolini 1893; ed. sec. lucis ope expressa 1955).
- Mair G. R. Mair, *Aratus with an English Translation*, in *Callimachus Lycophron Aratus* (Loeb, London / New York 1921).
- Zannoni Giuseppe Zannoni, *Arato di Soli, Fenomeni e Prognostici*, introduzione, traduzione e note (Sansoni, Firenze 1948).
- Martin Jean Martin, *Arati Phaenomena*, introduction, texte critique, commentaire et traduction (La Nuova Italia, Firenze 1956).
- Erren Manfred Erren, *Aratos Phainomena*, Sternbilder und Wetterzeichen, griechisch-deutsch, mit 23 Sternkarten von Peter Schimmel (Heimeran, München 1971).

## (b) Commentaries and translations

- Ach. *Isag.* Achilles, Ἐκ τῶν Ἀχιλλέως περὶ τοῦ Παντός, ed. Maass, *Comm.* 22–75.
- Arat. Lat.* *Aratus Latinus* ed. Maass, *Comm.* 174–306.
- Avien. Avien(i)us, *Les Phénomènes d'Aratos*, ed. Jean Soubiran (Budé, Paris 1981).
- Cic. *fr.* Cicero, *Aratea, Fragments poétiques*, ed. Jean Soubiran (Budé, Paris 1972) 158–95.
- Erren *PAS* Manfred Erren, *Die Phainomena des Aratos von Soli: Untersuchungen zum Sach- und Sinnverständnis* (Wiesbaden 1967).
- Germ. Germanicus, *Les Phénomènes d'Aratos*, ed. André Le Boeuffe (Budé, Paris 1975). D. B. Gain, *The Aratus Ascribed to Germanicus Caesar* (London 1976).
- Hi. *Hipparchi in Arati et Eudoxi Phaenomena commen-*

## BIBLIOGRAPHY AND ABBREVIATIONS

- |                      |  |
|----------------------|--|
|                      | <i>tariorum libri tres ad codicum fidem recensuit Germanica interpretatione et commentariis instruxit Carolus Manitius</i> (Teubner 1894). |
| Maass <i>Aratea</i>  | Ernestus Maass, <i>Aratea</i> (Berlin 1892).   |
| Maass <i>Comm.</i>   | E. Maass, <i>Commentariorum in Aratum Reliquiae</i> (Berlin 1898; repr. 1958)  |
| Martin <i>HT</i>     | J. Martin, <i>Histoire du texte des Phénomènes d'Aratos</i> (Paris 1956).  |
| Martin <i>SAV</i>    | J. Martin, <i>Scholia in Aratum Vetera</i> (Stuttgart 1974).   |
| <i>Schol. Germ.</i>  | A. Breysig, <i>Scholia in Germanici Caesaris Aratea</i> (Berlin 1867) 55–238.  |
| Schott & Böker       | <i>Aratos Sternbilder und Wetterzeichen</i> , übersetzt und eingeleitet von A. Schott mit Anmerkungen von R. Böker (München 1958).         |
| <i>Sphaer. Arat.</i> | Leontius, <i>De sphaerae Arateae constructione</i> , ed. Maass, <i>Comm.</i> 560–7.  |

## 2. TEXTS RELEVANT TO THE ASTRONOMY AND WEATHER SIGNS

- |                     |   |
|---------------------|---|
| Anon. Laur.         | <i>Anon. in cod. Laurentiano</i> 28.32 (saec. xv), fol. 12, ed. M. Heeger, <i>De Theophrasti qui fertur Περί σημείων libro</i> (1889) 66–71.          |
| Aristarchus         | <i>On the Sizes and Distances of the Sun and Moon</i> , ed. T. L. Heath, <i>Aristarchus of Samos</i> (Oxford 1913) 35 <sup>1</sup> –41 <sup>4</sup> . |
| Arist. <i>Mete.</i> | Aristotle, <i>Meteorologica</i> , ed. H. D. P. Lee (Loeb, Cambridge, Mass. / London 1978).  |
| Autol.              | Autolycus, <i>De sphaera quae mouetur, De orbitibus et occasibus</i> , ed. G. Aujac, <i>Autolycos de Pitane</i> (Budé, Paris 1979).                   |
| <i>Catast.</i>      | [Eratosthenis] <i>Catasterismi</i> , ed. A. Olivieri (Teubner 1897).  |
| CCAG 8.1            | <i>Excerpta ex cod. Par. 2229 descripsit</i> F. Cumont, <i>Catalogus Codicum Astrologorum</i> , vol. 8.1 (Bruxelles 1929) 137–40.                     |
| Cleom.              | Cleomedes, <i>De motu circulari</i> , ed. H. Ziegler (Teubner 1891).  |
| DK                  | <i>Die Fragmente der Vorsokratiker</i> , edd. H. Diels and W. Kranz (6th edn, Berlin 1951–2).   |
| D. S.               | <i>De signis, Theophrasti opera quae supersunt omnia</i> ,  |

## BIBLIOGRAPHY AND ABBREVIATIONS

- ed. F. Wimmer, vol. 3 *Fragmenta* 6 (Teubner 1862). *Theophrastus, Enquiry into Plants and Minor Works on Odours and Weather Signs*, with an English translation by Sir Arthur Hort, vol. 2 (Loeb, London / New York 1916) 390–433.
- Euc. Euclides, *Elementa* ed. J. L. Heiberg (Teubner 1883); ed. E. S. Stamatis (Teubner 1969). *Phaenomena* ed. H. Menge (Teubner 1916).
- Eudox. Eudoxus, *Phaenomena* and *Enoptron*, ed. F. Lasserre, *Die Fragmente des Eudoxus von Knidos* (Berlin 1966).
- Gem. *Cal.* Geminus, *Calendarium*, post *Elementa* ed. Manilius pp. 210–33; ed. Aujac pp. 98–108.
- Gem. *Elem.* Geminus, *Elementa Astronomiae ad codicum fidem recensuit, Germanica interpretatione et commentariis instruxit Carolus Manilius* (Teubner 1898; repr. 1974). Géminos, *Introduction aux Phénomènes*, texte établi et traduit par Germaine Aujac (Budé, Paris 1975).
- Gp.* *Geponica siue Cassiani Bassi scholastici de re rustica Eclogae*, ed. H. Boeckh.
- Hyg. Hyginus, *De astronomia*, ed. André Le Boeuffle (Budé, Paris 1983).
- Johannes Lydus *Liber de Ostentis et Calendaria graeca omnia*, ed. Curtius Wachsmuth (Teubner 1897).
- Man. Manilius, *Astronomica* with an English translation by G. P. Goold (Loeb, Cambridge, Mass. / London 1977).
- Manetho *Apotelesmatica*, ed. H. Koechly (Teubner 1858).
- Max. Maximus, *Περὶ Καταρχῶν*, ed. Arthur Ludwich (Teubner 1877).
- Pap. Wessely O. Neugebauer, 'Über griechische Wetterzeichen und Schattentafeln', *Sitzungsberichte der Wiener Akademie der Wissenschaften*, phil.-hist. Klasse Bd 240 (1962) Abh. 2.29–44.
- Posid. Posidonius, edd. L. Edelstein and I. G. Kidd (2 vols., Cambridge 1988).
- Ptol. *Alm.* *Claudii Ptolemaei Opera quae extant omnia*, vol. 1 *Μαθηματικὴ Σύνταξις*, ed. J. L. Heiberg (Teubner 1957). *Ptolemy's Almagest*, transl. and annot. by G. J. Toomer (Duckworth, London 1984).

## BIBLIOGRAPHY AND ABBREVIATIONS

- Ptol. *Phaseis* *Eiusdem opera*, vol. 2 Φάσεις Ἀπλανῶν Ἀστέρων καὶ Συναγωγή Ἐπισημασιῶν, ed. Heiberg (Teubner 1907).
- Ptol. *Tetr.* *Eiusdem opera*, vol. 3.1 Ἀποτελεσματικά, edd. F. Boll et Ae. Boer (Teubner 1957).
- Sphaera* [Empedoclis] *Sphaera* = Ἀπλανῶν ἄστρων σφαῖρα, ed. Maass, *Comm.* 154–69.
- Theon Smyrn. Theon Smyrnaeus Platoniscus, *De astronomia*, ed. E. Hiller (Teubner 1878).

## 3. OTHER TEXTS

- A. fr. S. Radt, *TrGF*, vol. 3 Aeschylus (Göttingen 1985).
- Antim. B. Wyss, *Antimachi Colophonii reliquiae* (Berlin 1936).
- Bion & Moschus A. S. F. Gow, *Bucolici Graeci* (OCT, Oxford 1952), pp. 131–67.
- CA *Collectanea Alexandrina*, ed. J. U. Powell (Oxford 1925; repr. 1970).
- Call. R. Pfeiffer, *Callimachus* (Oxford 1949, 1953; reissued 1985); G. R. McLennan, *Hymn to Zeus* (Rome 1977); F. Williams, *Hymn to Apollo* (Oxford 1978); N. Hopkinson, *Hymn to Demeter* (Cambridge 1984); A. W. Bulloch, *The Fifth Hymn* (Cambridge 1985).
- Cleanthes CA pp. 227–31; Neil Hopkinson, *A Hellenistic Anthology* (Cambridge 1985), pp. 27–9.
- E. fr. A. Nauck, *TrGF* (2nd edn, Leipzig 1889).
- FGE *Further Greek Epigrams: Epigrams before A.D. 50 from the Greek Anthology and Other Sources . . .*, ed. D. L. Page (Cambridge 1981).
- FHG *Fragmenta Historicorum Graecorum*, ed. C. Müller, 5 vols. (Paris 1861–70).
- GP *The Garland of Philip and Some Contemporary Epigrams*, edd. A. S. F. Gow and D. L. Page (Cambridge 1968).
- Greg. Naz. *Sancti Gregorii Nazianzeni Carmina Selecta*, ed. E. Dronke (Göttingen 1840).
- HE *The Greek Anthology: Hellenistic Epigrams*, edd. A. S. F. Gow and D. L. Page (Cambridge 1965).

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## BIBLIOGRAPHY AND ABBREVIATIONS

Hes. fr.	R. Merkelbach and M. L. West, <i>Fragmenta Hesiodae</i> (Oxford 1967).
Nic.	<i>Nicanter</i> , edd. A. S. F. Gow and A. F. Scholfield (Cambridge 1953).
Orph.	<i>Orphicorum Fragmenta</i> , ed. Otto Kern (Berlin 1922).
PMG	<i>Poetae Melici Graeci</i> , ed. D. L. Page (Oxford 1962).
Sapph., Alc.	<i>Poetarum Lesbiorum Fragmenta</i> , edd. E. Lobel and D. L. Page (Oxford 1955).
S. fr.	S. Radt, <i>TrGF</i> , vol. 4 Sophocles (Göttingen 1977).
SH	<i>Supplementum Hellenisticum</i> , edd. H. Lloyd-Jones and P. Parsons (Berlin / New York 1983).
SVF	<i>Stoicorum Veterum Fragmenta</i> , ed. H. von Arnim (Leipzig 1903).
TrGF	<i>Tragicorum Graecorum Fragmenta</i> , edd. B. Snell, al. (Göttingen 1971–).
Tzetzes <i>Chil.</i>	<i>Ioannis Tzetzae Historiarum Variarum Chiliades</i> , ed. Theophilus Kiessling (Leipzig 1826; repr. Hildesheim 1963).

For fragments of iambus and elegy, reference is to M. L. West, *Iambi et Elegi Graeci ante Alexandrum Cantati* (2nd edn, Oxford 1989).

## 4. GENERAL WORKS

AAC	<i>L'astronomie dans l'antiquité classique</i> , Actes du Colloque tenu a l'Université de Toulouse le Mirail 21–23 octobre 1977 (Paris 1979).
Allen	Richard Hinckley Allen, <i>Star Names: their Lore and Meaning</i> (New York 1963).
Aujac <i>Str.</i>	G. Aujac, <i>Strabon et la science de son temps</i> (Paris 1966).
Aujac <i>Zodiaque</i>	G. Aujac, 'Le zodiaque dans l'astronomie grecque', <i>Revue d'Histoire des Sciences</i> 33 (1980) 3–32.
Autenrieth	G. Autenrieth, <i>A Homeric Dictionary</i> , translated by R. P. Keep, rev. I. Flagg (Oklahoma 1958).
Bernhardy	G. Bernhardy, <i>Wissenschaftliche Syntax</i> (Berlin 1829).
Bickerman	E. J. Bickerman, <i>Chronology of the Ancient World</i> (London 1968).

## BIBLIOGRAPHY AND ABBREVIATIONS

- BKT* *Berliner Klassikertexte*, herausgegeben von der Generalverwaltung der Kgl. Museen zu Berlin (Berlin 1904–).
- Boll *Sphaera* F. Boll, *Sphaera. Neue griechische Texte und Untersuchungen zur Geschichte der Sternbilder* (Leipzig 1903).
- Chantraine P. Chantraine, *Grammaire homérique* (Paris 1958–63).
- Chantraine *MHG* P. Chantraine, *Morphologie historique du grec* (Paris 1945).
- CHCL* 1 *The Cambridge History of Classical Literature*, vol. 1 *Greek Literature*, edd. P. E. Easterling and B. M. W. Knox (Cambridge 1985).
- Cobet C. G. Cobet, *Variae Lectiones*, 2nd edn (Leiden 1873).
- Cook A. B. Cook, *Zeus: a Study in Ancient Religion*, vol. 2 (Cambridge 1925).
- Defradas J. Defradas, Review of Martin, *REG* 70 (1957) 275–7.
- Denniston J. D. Denniston, *The Greek Particles* (2nd edn, Oxford 1954).
- Dicks *EGA* D. R. Dicks, *Early Greek Astronomy to Aristotle* (London 1970).
- Dicks *GFH* D. R. Dicks, *Geographical Fragments of Hipparchus* (London 1960).
- Diggle *Phaethon* J. Diggle, *Euripides, Phaethon* (Cambridge 1970).
- Diggle *Studies* J. Diggle, *Studies on the Text of Euripides* (Oxford 1981).
- Edwards G. P. Edwards, *The Language of Hesiod in its Traditional Context* (Oxford 1971).
- Et. M.* *Etymologicum Magnum*, ed. T. Gaisford (Oxford 1848; repr. 1962).
- Fehling D. Fehling, *Die Wiederholungsfiguren und ihr Gebrauch bei den Griechen vor Gorgias* (Berlin 1969).
- Ferrari W. Ferrari, 'Cicerone e Arato', *SIFC* 17 (1940) 77–96.
- Friesevan H. Friesevan, *Collectanea Critica* (Amsterdam 1786).
- Frisk H. Frisk, *Griechisches etymologisches Wörterbuch* (Heidelberg 1960–70).
- Gaisford T. Gaisford, *Poetae Graeci Minores*, vol. 3 (Oxonii 1820).

## BIBLIOGRAPHY AND ABBREVIATIONS

- Gilbert O. Gilbert, *Die meteorologischen Theorien des griechischen Altertums* (Leipzig 1907).
- Goodwin *GG* W. W. Goodwin, *A Greek Grammar* (London 1894).
- Goodwin *MT* W. W. Goodwin, *Syntax of the Moods and Tenses of the Greek Verb* (London 1899).
- Greenler R. Greenler, *Rainbows, Haloes and Glories* (Cambridge 1980).
- Guthrie *HGP* W. K. C. Guthrie, *A History of Greek Philosophy* (6 vols., Cambridge 1962–81).
- Hainsworth J. B. Hainsworth in *A Commentary on Homer's Odyssey*, vol. 1 (Oxford 1988).
- Harrison J. E. Harrison, *Themis, a Study of the Social Origins of Greek Religion* (Cambridge 1912).
- Hattink C. J. Hattink, review of Martin, *CR* 8 (1958) 28–30.
- Heath T. L. Heath, *Aristarchus of Samos* (Oxford 1913).
- Heeger M. Heeger, *De Theophrasti qui fertur Περὶ σημείων libro* (Lipsiae 1889).
- Hermann G. Hermann, *Orphica* (Lipsiae 1805).
- Hilberg *Der Princip der Silbenwägung und die daraus entspringenden Gesetze der Endsilben in der griechischen Poesie* (Wien 1879).
- Honigman E. Honigman, 'The Arabic translation of Aratus' *Phainomena*', *Isis* 41 (1950) 30–1.
- Hopkinson *HA* Neil Hopkinson, *A Hellenistic Anthology* (Cambridge 1988).
- Hutchinson *HP* G. O. Hutchinson, *Hellenistic Poetry* (Oxford 1988).
- Irigoin J. Irigoin, *Histoire du texte de Pindare* (Paris 1952).
- James A. W. James, 'The Zeus Hymns of Cleanthes and Aratus', *Antichthon* 6 (1972) 28–38.
- Jermyn L. A. S. Jermyn, 'Weather-signs in Virgil', *Greece and Rome* 20 (1951) 26–37, 49–59.
- Kaibel G. Kaibel, review of Maass, *Göttingische gelehrte Anzeiger* n. s. 1 (1893) 937–61.
- Kastner W. Kastner, *Die griechischen Adjective zweier Endungen auf -ΟΣ* (Heidelberg 1967).
- K–B R. Kühner and F. Blass, *Ausführliche Grammatik der griechischen Sprache* (Hanover 1890–2).
- Kerényi C. Kerényi, *The Gods of the Greeks* (London 1951).



## BIBLIOGRAPHY AND ABBREVIATIONS

- Keydell R. Keydell, review of Martin, *Gnomon* 30 (1958) 581–4.
- K–G R. Kühner and B. Gerth, *Ausführliche Grammatik der griechischen Sprache* (Hanover/Leipzig 1898–1904).
- Kiefner G. Kiefner, *Die Versparung: Untersuchungen zu einer Stilfigur der dichterischen Rhetorik am Beispiel der griechischen Tragödie, unter Berücksichtigung des σχῆμα ἀπὸ κοινοῦ* (Wiesbaden 1964).
- Kirk G. S. Kirk, *The Iliad. A Commentary*, vol. 1 *Books 1–4* (Cambridge 1985).
- Kramer B. Kramer, *Kölner Papyri*, Bd 4 (Opladen 1982) 144–50.
- Lasserre F. Lasserre, *Die Fragmente des Eudoxus von Knidos* (Berlin 1966).
- Le Bourdellès H. Le Bourdellès *L'Aratus Latinus. Etude sur la culture et la langue latine dans le Nord de la France au VIIIe siècle* (Université de Lille III, 1985).
- Leumann M. Leumann, *Homerische Wörter* (Basel 1950).
- LfrgE* B. Snell and H. Erbse, edd., *Lexikon des frühgriechischen Epos* (Göttingen 1955–).
- Lobeck *Par.* C. A. Lobeck, *Paralipomena Grammaticae Graecae* (Lipsiae 1837).
- Lobeck *Phryn.* C. A. Lobeck, *Phrynichi Eclogae Nominum et Verborum Atticorum* (Lipsiae 1820).
- Lobeck *Proll.* C. A. Lobeck, *Pathologiae Sermonis Graeci Prolegomena* (Lipsiae 1843).
- Lobeck *Rhem.* C. A. Lobeck, *Ῥηματικόν, sive Verborum Graecorum et Nominum Verbalium Technologia* (Regimonti 1846).
- Loebe V. Loebe, *De Elocutione Arati Solensis Poetae* (diss., Halle 1864).
- Lombardo *AW* S. Lombardo, 'Auriga reoriented: a note on constellation forms and Greek artistic imagination', *The Ancient World* 2 (1979) 107–9.
- LSJ *A Greek–English Lexicon*, edd. H. G. Liddell, R. Scott, H. Stuart Jones, R. McKenzie (9th edn with Supplement, Oxford 1968).
- Ludwich A. Ludwich, *De Hexametris poetarum Graecorum spondaicis* (Halle 1866).
- Ludwig *Hermes* W. Ludwig, 'Die Phaenomena Arats als hellenistische Dichtung', *Hermes* 91 (1963) 425–48.

## BIBLIOGRAPHY AND ABBREVIATIONS

- Ludwig *RE* W. Ludwig, 'Aratos', *RE* Supplementband x (1965) 26–39.
- Maas P. Maas, *Greek Metre* (English translation by H. Lloyd-Jones, Oxford 1962).
- Manitius C. Manitius, *Hipparchi Commentaria* (Leipzig 1894).
- Maxwell-Stuart P. G. Maxwell-Stuart, *Studies in Greek Colour Terminology* (Leiden 1981).
- Monro *HG* D. B. Monro, *A Grammar of the Homeric Dialect* (2nd edn, Oxford 1891).
- Neugebauer *ESA* O. Neugebauer, *The Exact Sciences in Antiquity* (2nd edn, New York 1969).
- Neugebauer *HAMA* O. Neugebauer, *A History of Ancient Mathematical Astronomy*, 3 vols. (Berlin / Heidelberg / New York 1969).
- Norden E. Norden, 'Beiträge zur Geschichte der griechischen Philosophie', *Jahrb. für classische Philologie*, Suppl. 19 (1893) 365–462.
- Norton *OLD* *Norton's Star Atlas* (16th edn, 1973).  
*The Oxford Latin Dictionary*, ed. P. G. W. Glare (Oxford 1968–82).
- O'Neill E. G. O'Neill, 'The localization of metrical word-types in the Greek hexameter. Homer, Hesiod and the Alexandrians', *YCS* 8 (1942) 102–76.
- Opelt I. Opelt, 'Alliteration im Griechischen? Untersuchungen zur Dichtersprache des Nonnos von Panopolis', *Glotta* 37 (1958) 205–32.
- Ovenden K. Ovenden, 'The origin of the constellations', *JBAA* 71 (1960–1) 91–5.
- Palmer L. R. Palmer, *The Greek Language* (London 1980).
- Pasquali G. Pasquali, 'Das Prooimion des Arat', *Χάριτες Friedrich Leo* (Berlin 1911).
- Pollard J. Pollard, *Birds in Greek Life and Myth* (London 1977).
- Polunin & Ever. O. Polunin, *Trees and Bushes of Europe*, with drawings by Barbara Everard (London 1976).
- Polunin & Hux. O. Polunin and A. Huxley, *Flowers of the Mediterranean* (London 1967).
- Porter H. N. Porter, 'The early Greek hexameter', *YCS* 12 (1951) 3–63.
- RE* *Pauly's Realencyclopädie der classischen Altertums-*

## BIBLIOGRAPHY AND ABBREVIATIONS

- wissenschaft*, edd. G. Wissowa et al. (Stuttgart / München 1894- ).
- Regenbogen O. Regenbogen, *RE Suppl.* VII, 1412–15.
- Rehm A. Rehm, *Parapegmastudien* (Abhandlungen der Bayerischen Akad. d. Wiss., phil.-hist. Abt., neue Folge, Heft 19, 1941).
- Richardson N. J. Richardson, *The Homeric Hymn to Demeter* (Oxford 1974).
- Ronconi A. Ronconi, 'Arato interprete di Omero', *SIFC* 14 (1937) 167–202, 237–59.
- Roscher W. H. Roscher, *Ausführliches Lexikon der griechischen und römischen Mythologie*, Bände I–VI (Leipzig/Berlin 1924–37).
- Royds T. F. Royds, *The Beasts, Birds and Bees of Virgil* (Oxford 1914).
- Sandbach F. H. Sandbach, *Plutarch's Moralia*, vol. 15 *Fragments* (Loeb, Cambridge, Mass. / London 1969).
- Schmidt M. Schmidt, 'Zu Aratos', *Philologus* 9 (1854) 396–400, 551–5.
- J. Schneider J. G. Schneider, *Griechisch–Deutsches Wörterbuch* (Leipzig 1819).
- O. Schneider O. Schneider, *Callimachea* (vol. 1, Leipzig 1870, vol. 2, 1873).
- Schwabl H. Schwabl, 'Zur Mimesis bei Arat', *WS* Beiheft 5 (1972) 336–56.
- Schwyzler E. Schwyzler, *Griechische Grammatik* (München 1939–71).
- Shipp G. P. Shipp, *Studies in the Language of Homer* (2nd edn, Cambridge 1972).
- Solmsen F. Solmsen, 'Aratus on the Maiden and the Golden Age', *Hermes* 94 (1966) 124–8.
- Spitzner F. Spitzner, *De Versu Graecorum Heroico, maxime Homeroico* (Leipzig 1816).
- Stanford W. B. Stanford, *The Odyssey of Homer* (London 1950–4).
- Stinton T. C. W. Stinton, 'Si credere dignum est: some expressions of disbelief in Euripides and others', *PCPS* n.s. 22 (1976) 60–89 = *Collected Papers on Greek Tragedy* (Oxford 1990) 236–64.
- Thiel R. Thiel, *And There Was Light: the Discovery of the Universe*, translated from the German by R. and C. Winston (London 1958).

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## BIBLIOGRAPHY AND ABBREVIATIONS

- |                      |   |
|----------------------|---|
| Thompson             | D. W. Thompson, <i>A Glossary of Greek Birds</i> (2nd edn, Oxford 1936).  |
| Traglia              | A. Traglia, <i>SCO</i> 15 (1966) 250–8.   |
| Ungnad               | A. Ungnad, 'Babylonische Sternbilder oder der Weg babylonischer Kultur nach Griechenland', <i>Zeitschrift für die Deutsche Morgenländischen Gesellschaft</i> 77 (1923) 81–91. |
| Veitch               | W. Veitch, <i>Greek Verbs Irregular and Defective</i> (Oxford 1887).  |
| Vlastos              | G. Vlastos, <i>Plato's Universe</i> (Oxford 1975).  |
| Waerden <i>AHES</i>  | B. L. van der Waerden, 'Greek astronomical calendars', <i>AHES</i> 29 (1984) 101–30.  |
| Waerden <i>EW</i>    | B. L. van der Waerden, <i>Erwachende Wissenschaft</i> , Bd 2 <i>Die Anfänge der Astronomie</i> (Basel/Stuttgart 1968).  |
| Waltz                | P. Waltz, 'Τροπαὶ Ἡελίου. Notes sur Odyssee xv 404', <i>Revue des Etudes Homériques</i> 1 (1931) 3–15.  |
| West <i>GM</i>       | M. L. West, <i>Greek Metre</i> (Oxford 1982).   |
| West <i>Th., Op.</i> | M. L. West, <i>Hesiod Theogony</i> (Oxford 1966); <i>Works and Days</i> (Oxford 1978).  |
| Wilamowitz <i>HD</i> | U. von Wilamowitz-Moellendorf, <i>Hellenistische Dichtung</i> (Berlin 1924).  |
| Wilkinson            | L. P. Wilkinson, <i>The Georgics of Virgil</i> (Cambridge 1969).  |
| Wyatt                | W. F. Wyatt, Jr, <i>Metrical Lengthening in Homer</i> (Rome 1969).  |

In the Introduction and Commentary I have also used the following astronomical abbreviations: ER (evening rising), ES (evening setting), MR (morning rising), MS (morning setting).