

**AN INTRODUCTION TO  
ASTRONOMY, TO WHICH IS  
ADDED AN ASTRONOMICAL  
VOCABULARY**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649055708

An Introduction to Astronomy, to Which Is Added an Astronomical Vocabulary by J. R. Hind

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Cover @ 2017

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AN

INTRODUCTION

TO

ASTRONOMY,

TO WHICH IS ADDED

AN ASTRONOMICAL VOCABULARY

CONTAINING AN EXPLANATION OF TERMS  
IN USE AT THE PRESENT DAY.

BY

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THIRD EDITION.

REVISED AND GREATLY ENLARGED.

LONDON:

HENRY G. BOHN, YORK STREET, COVENT GARDEN.

1863.



PRINTED BY TAYLOR AND FRANCIS,  
AND LION COURT, FLEET STREET.

## PREFACE.

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THE 'Introduction to Astronomy' and 'Astronomical Vocabulary,' which together form the present Volume, were originally published separately, but have been for some time out of print. The 'Introduction' having had a large sale in this country, and been translated into several foreign languages, I have thought the plan of the work concise as it is, sufficiently approved, and have only made such alterations as were rendered necessary by the progress of Science. The 'Vocabulary,' however, has been considerably enlarged, and, it is hoped, thereby rendered additionally useful. The object of both works is to convey the fullest information in the fewest words consistent with a clear understanding of the subject.

J. R. HIND.

Mr. Bishop's Observatory,  
Twickenham, August 1863.





EXPLANATION OF  
ASTRONOMICAL SYMBOLS AND ABBREVIATIONS.

*Signs of the Zodiac.*

Aries .....	♈		Libra .....	♎
Taurus .....	♉		Scorpio .....	♏
Gemini .....	♊		Sagittarius .....	♐
Cancer .....	♋		Capricornus .....	♑
Leo .....	♌		Aquarius .....	♒
Virgo .....	♍		Pisces .....	♓

*The Sun and Principal Planets.*

The Sun .....	☉		Mars .....	♂
The Moon .....	☾		Jupiter .....	♃
Mercury .....	☿		Saturn .....	♄
Venus .....	♀		Uranus .....	♅
The Earth .....	⊕ or ♂		Neptune .....	♆

*Various.*

♊	Ascending Node.
♋	Descending Node.
♌	Conjunction.
♍	Opposition.
☐	Quadrature.
°	Degree.
'	Minute of Arc.
"	Second of Arc.
h	Hour.
m	Minute of Time.
s	Second of Time.

$R$ or $\alpha$ . . . .	Right Ascension.	
$\delta$ . . . . .	Declination. + North; - South.	
N.P.D. . . . .		North Polar Distance.
$r$ . . . . .	Radius Vector.	} In Cometary or Planetary calculations.
$\Delta$ . . . . .	Distance from the Earth.	
$I$ . . . . .	Intensity of Light.	
n.p. . . . .	North preceding.	
n.f. . . . .	North following.	
s.p. . . . .	South preceding.	
s.f. . . . .	South following.	
G.M.T. . . . .	Greenwich Mean Time.	
S.P. . . . .	Sub polo.	
M.Eq. . . . .	Mean Equinox.	

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## CORRIGENDA.

- Page 94, line 8 from bottom, and page 95, line 8 from top, for *seventy-five* read *seventy-eight*.
- Page 128, the figure of the constellation Orion is accidentally inverted as regards its appearance to an observer in northern latitudes: it is correct for the southern hemisphere.

## A

# FIRST INTRODUCTION TO ASTRONOMY.

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### PRELIMINARY DEFINITIONS.

ASTRONOMY is that branch of natural science which treats of the heavenly bodies, describing their apparent and real magnitudes, distances, and motions, and the laws by which they are governed. The wonderful facts it reveals to us respecting the mechanism of the heavens, the grandeur and illimitable extent of the starry universe, and the beautiful harmony and regularity which prevail in the varied phenomena of the skies, have well entitled it to be called "the sublime science."

The determination of the apparent and real magnitudes and distances of the heavenly bodies, their orbits or paths in space, and every thing relating to description or observation, form what is called *Plane or Practical Astronomy*; the latter term is sometimes more especially applied to the management of astronomical instruments, and the explanation of the processes of calculation which attend their use.

The investigation of the *causes* operating in the motions and phenomena of celestial bodies constitutes *Theoretical or Physical Astronomy*—an abstruse and difficult study, which involves mathematical reasoning of the highest order, and is consequently suited only to the comprehension of the few.

In the present treatise we have to explain the principles of *Plane Astronomy*, and to place before the learner an outline of the most remarkable discoveries of ancient and modern times in this interesting science.