

The following tables and charts are from The Classroom Astronomer magazine, Spring 2013, Issue 15 (2013), from the article/column “Astronomy of the Northern Sky – How Bright Is That Star?”

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Table 1. Can You See The Difference? I
1-Magnitude Difference

When making comparisons, it is best to make them side-by-side, so the *best* pair to see a **one-magnitude difference** would be Alpha and Iota Cephei. Alpha is the lower right corner of the traditional Cepheus “house” asterism whereas Iota is the left-side base star of the roof. A bit brighter pair is Beta Cephei and either Alpha Cassiopeiae or Gamma Draconis, the brightest star in Draco the Dragon’s lozenge-shaped head (making this a better pair for summer and fall). The brightest pair aren’t all that close by—Deneb (Alpha Cygni) and Beta Cassiopeiae (the rightmost star in the Queen’s “W” shape; Alpha is the next one left of Beta).

2-Magnitudes Difference

Two pairs from which to choose. One is Capella (Alpha Aurigae) and Beta Ursa Minoris (Kochab). The other is in the summer sky—Deneb and either Beta Cephei (a slight variable, not enough to worry about) or Iota Draconis, in the threesome of the Dragon’s second coil (see page 21).

3-Magnitudes Difference

Capella and Delta Draconis.

4-Magnitudes Difference

Capella *again* plus Delta Cephei. However the latter has about a one-magnitude range in variation so it is not an accurate example, just a general one.

Table 2. Can You See The Difference? II

Italics means the brightness varies.

Exact Magnitude	Magnitude (Nearest 0.1)	Star Name
3.00	3.0	γ UMi
<i>3.03</i>	<i>3.0</i>	ε Aur
3.07	3.1	δ Dra
3.21	3.2	γ Cep
3.23	3.2	β Cep
3.29	3.3	ι Dra
3.41	3.4	η Cep
<i>3.46</i>	3.5	η Cas
3.50	3.5	ι Cep

Table 3: Stars for Light Pollution Measures

0.1 α Aur
1.3 α Cyg
1.9 η UMa
2.0 α UMi
2.1 β UMi
2.5 γ UMa
2.5 α Cep
3.0 γ UMi
3.0 ϵ Aur
3.5 η Cas
3.5 ι Cep
4.1 δ Cep

It's Greek to You?

Bayer designation is one of the oldest ways of naming stars. It uses a Greek letter plus the constellation's genitive form, e.g. α Ursa Majoris. Thus the brightest one should be Alpha, the second brightest Beta, and so on. The system isn't perfect, sometimes the names are out of order and sometimes you can have a bunch of stars with the same letter, distinguished by numbers, i.e. ζ^1 , ζ^2 , etc. and actually listed in positional order.

Below are the Greek letters we'll be using in the article:

Alpha α
 Beta β
 Gamma γ
 Delta δ
 Epsilon ϵ
 Zeta ζ
 Eta η
 Iota ι
 Psi ψ

These are the abbreviations for the constellations mentioned:

UMa Ursa Major
 UMi Ursa Minor
 Cyg Cygnus
 Aur Auriga
 Per Perseus
 Dra Draco
 Cas Cassiopeia
 Cep Cepheus



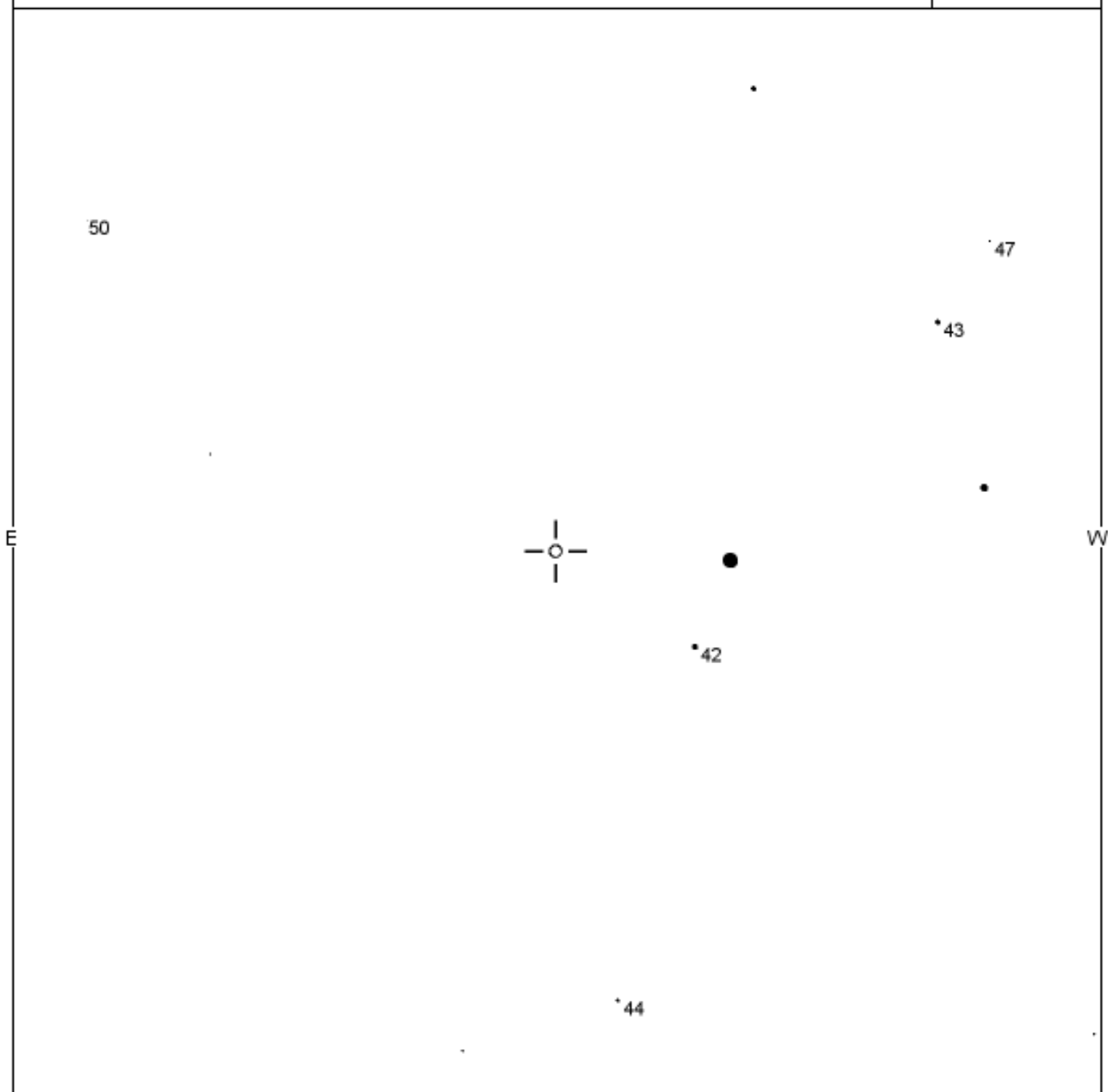
Delta Cephei →

del Cep

Magn: 3.48 - 4.37 V
Period: 5.366341
Type: DCEP
Spec: F5Ib-G1Ib

delta CEP
(2000) 22:29:10.27 +58:24:54.7

AAVSO
Binocular
Chart
10661AB



FOV = 15.0'

Please use the photometry table for CCD observations.

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T Cep

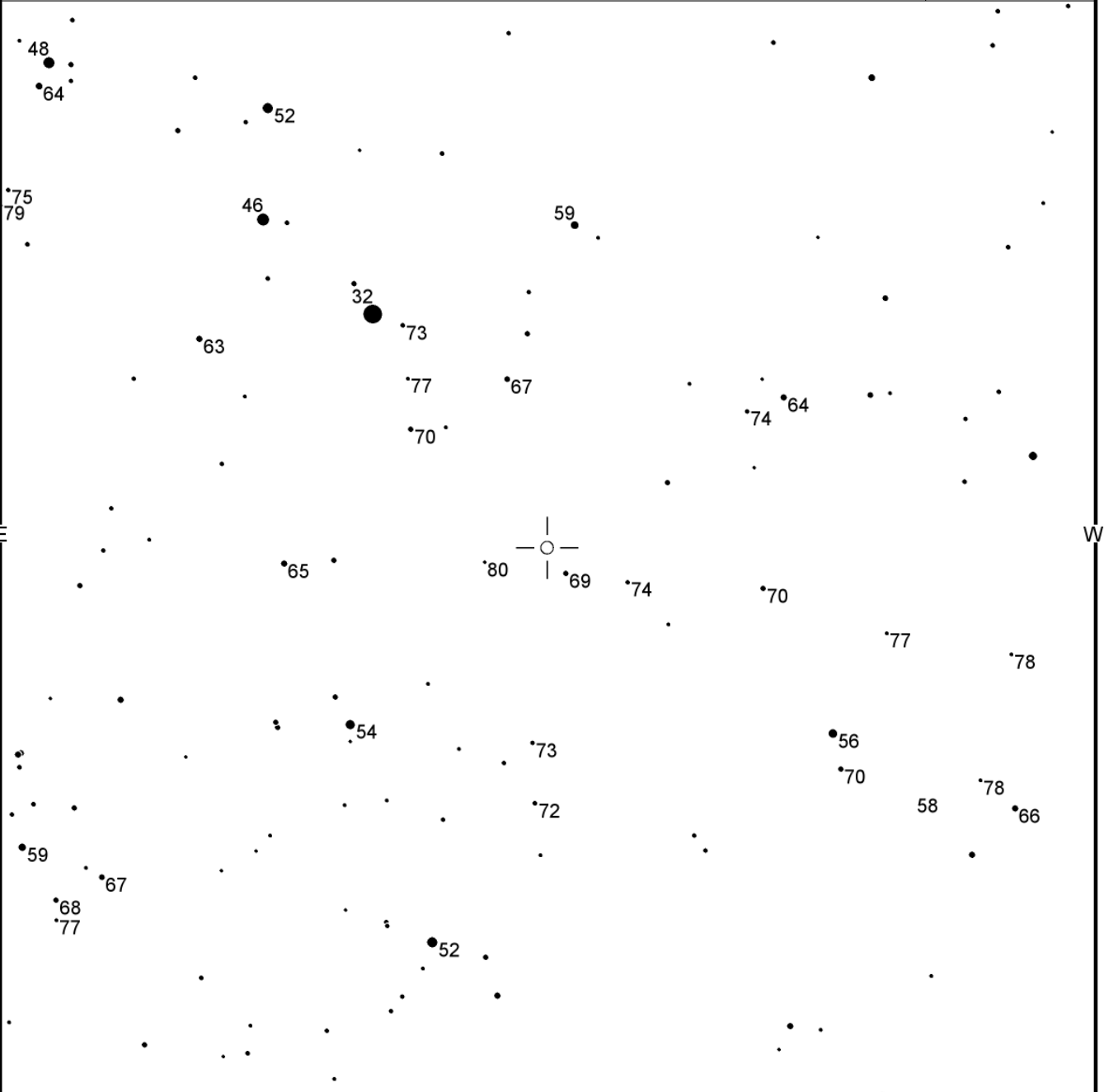
Magn: 5.2 - 11.3 V
Period: 388.14
Type: M
Spec: M5.5e-M8.8e

T CEP

(2000) 21:09:31.78 +68:29:27.2

AAVSO
Chart

10661CA



FOV = 10.0°

Please use the photometry table for CCD observations.

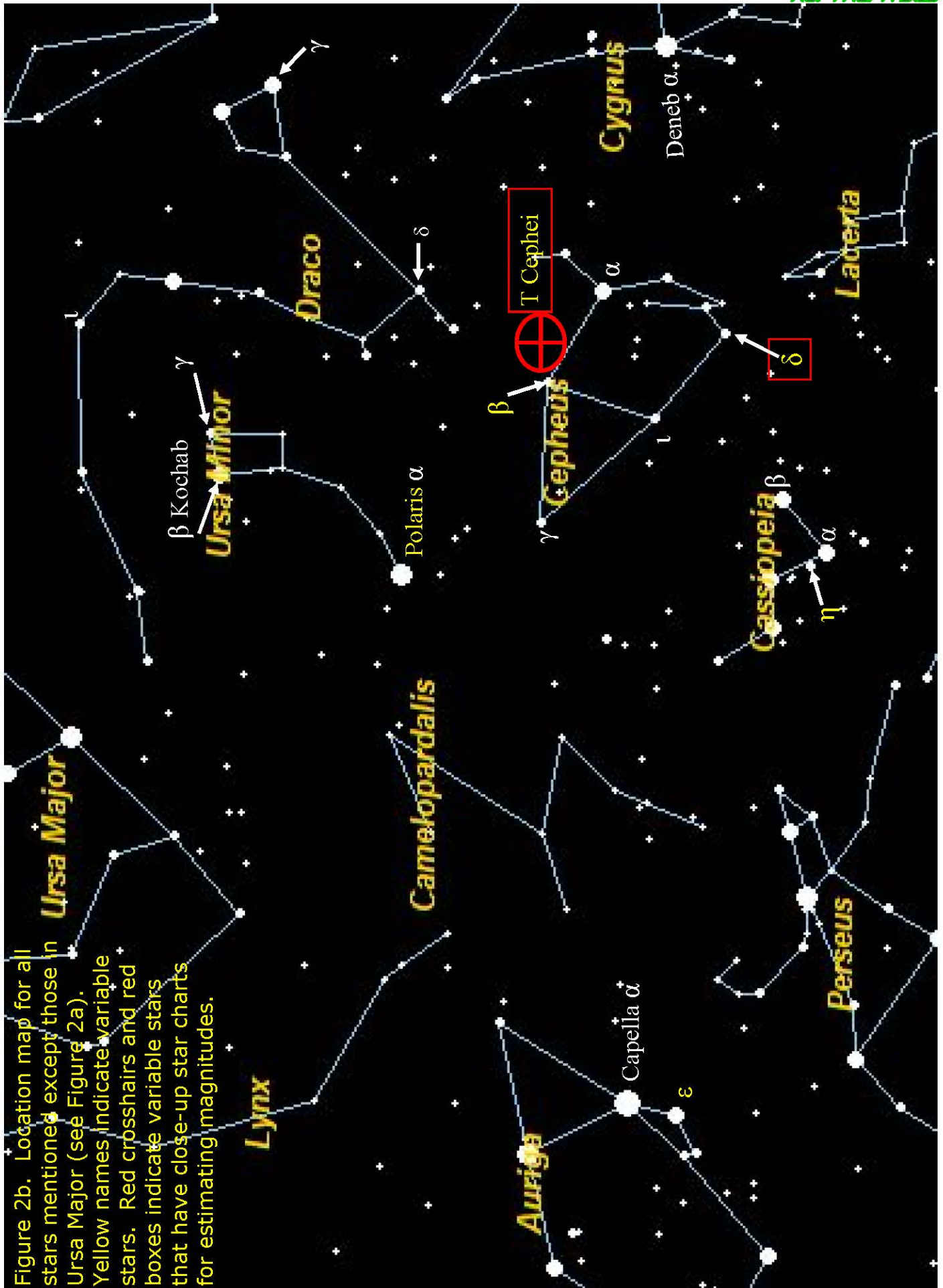
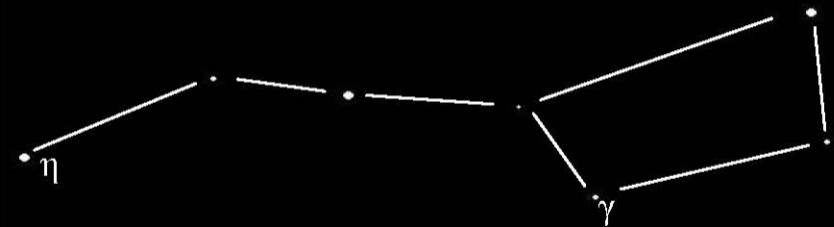


Figure 2b. Location map for all stars mentioned except those in Ursa Major (see Figure 2a). Yellow names indicate variable stars. Red crosshairs and red boxes indicate variable stars that have close-up star charts for estimating magnitudes.





Ursa Major

Figure 2a. Chart of stars in Ursa Major, to work with Figure 2b (next page) in locating stars of known magnitude.