CORRESPONDENCE

To the Editors of 'The Observatory'

Astereoasteroseismology

Trimble's low-resolution view of asteroseismology[1] calls for a high-resolution account of the term's etymology. Trimble deliberately removed the letter 'e' from 'astero-', having confused the connotation of the prefix with that of the seemingly homophonious 'stereo-'. The prefix 'astero-' derives from the classical Greek *astēr* (ἀστήρ = star), and is unrelated to Trimble's divagation 'stereo-' (from στερεός = solid). From *astēr* is derived the Latin noun *stella* (stēr + la = *sterula*?; cf. Gothic *stairnō*, Sanskrit *stár*), meaning a star, whence came the English adjective stellar.

Astēr is the more common form used in Attic Greek to denote a star[2]; the less common form is *astron* (ἄστρον), which I address later. *Astēr* was used not only to denote either a fixed star in the heavens[3], particularly the brightest star (*Seirios astēr*)[4], or a shooting star[5–8], but also a starfish[9–10] and other star-like objects such as certain flowers[11]. Indeed, the Greek form survives unaltered in the English language as the common name for the star-shaped mauve daisy *aster amellus* and its relatives, whose colours range from white (*e.g., aster ericoides*) to the modern vivid red (*aster novi-belgii*). Metaphorically, *astēr* denoted an illustrious person[12], as did *astron*[13], and as also does 'star' in English today.

Astēr was in use by common authors in numerous compound forms in early and late classical Greek: *asteroeidēs* = starlike[14,15] or starry[16] and *asterōpos* = starlike[17,18] (also *asteropos*[19]), *asterismos* = marking with stars[20], *asteroommatos* = star-eyed[21], *asteromarmarygē* = the brightest of the stars[22], to mention but a few. The compound *asteroskopos* (*astero-* + *skopos* = a person who watches the stars; *cf. asteroskopō* = watch the stars[23]) means astronomer or astrologer[24]. Derivatives of *astēr* that exist commonly in English today are asterisk (from *asteriskos*, a diminutive of *astēr*), asterism (from *asterismos*), asteroid (aster- + oid, whence asteroidal, not to be confused with the adjective with the same spelling pronounced ā′steroidal, whose etymology is quite different) and, less commonly, asterial, asteriated, asteristic, asterophyllite and asteroseismology (*astero-* + *seismos* = tremor + *logos* = reasoning, discourse).

The Greek word *astron* was used mainly in the plural to mean 'the stars'[25,26]. In the singular, like *astēr*, it was frequently used of Sirius[27–29] (in full, *sērion astron*), although seldom of 'any common star'[30,31]. There were fewer compounds than with *astēr*, although *astronomia* = astronomy[32–34] and related words are notable: *astronomos*[35] and *astrologos*[36] appear to be the more common forms for astronomer, the latter later denoting astrologer[37,38]. Moreover, there are a host of technical terms in English that use the prefix 'astro-', including, in addition to astrology and astronomy, words such as astrobolism, astrochronology, astrogeny, astrognosy, astrolithology, astrometry, astrophile, astrophobe, astroscopy, astrotheology, and their derivatives, in addition to astromancy and more modern words such as astrodome, astronaut, astrophysics and (by indirect association) astroturf. In view of the rather more catholic use of the prefix, in both classical and modern times, it is appropriate that present-day astronomers and astrophysicists do not confine their studies solely to the stars.

Since asteroseismology pertains specifically to stars, and particularly to individual stars, the appellation is etymologically preferable. Indeed, that is why it was so chosen. Nonetheless, to have originally chosen Trimble's alternative

would hardly have been considered wholly incorrect. What certainly is incorrect, however, is for reviewers or editors to change to it now, wittingly[1] or not[39]. Trimble's alternative is undoubtedly better than the oedipal combination 'stellar seismology', which, like the misbegotten 'solar seismology', has little to commend itself[40]. Surely, one should always prefer thoroughbreds, such as geoseismology, probably the oldest of the seismological disciplines, selenoseismology[41], planetary seismology[42], diskoseismology[43], and the subdisciplines epichorioseismology[44,45] and telechronoseismology[46] of helioseismology, and leuconanoseismology[47] and erythrogigantoseismology[48] of asteroseismology!

Trimble's reference to 'stereo-' raises the issue of whether asteroseismology should be qualified further. Stereohelioseismology has been mooted for obviating spatial sidelobes in the spherical-harmonic decomposition of solar oscillations[49]; the idea is technically feasible, but probably uneconomical. However, it is unlikely that stereoasteroseismology will be either feasible or particularly desirable in the foreseeable future, so to encumber the current discipline with an essentially redundant qualifier would surely be perverse. We should therefore refrain from doing so.

I hope this discussion will dissuade idiosyncratic reviewers of the field from mispronouncing further on our subject in a manner that detracts from its legitimate etymological origins.

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[Modern dates (those within the current millenium) are dates of publication; except where stated otherwise, classical dates indicate, sometimes only approximately, the time during which an author lived; Arabic numerals refer to years, Roman numerals to centuries.]

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