

Interactive comment on “Observations of meteor-head echoes using the Jicamarca 50 MHz radar in interferometer mode” by J. L. Chau and R. F. Woodman

Anonymous Referee #1

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This is a very nice, to-the-point paper that recounts a somewhat surprising result - the vast majority of meteors detected by this very large radar are streaming in from the Earth's Apex. But however well presented the results may be, they need to be placed in context in Solar System studies. Taken at face value, the peak heliocentric velocity of 60 km/s for incoming meteors from the Earth's Apex implies that most of the particles (and therefore of the mass?) are traveling around the Sun in retrograde orbits with semi-major axes of 1 AU. How do these results compare to others? In light of the huge bias that Hunt et al (Icarus 2004, vol 168, pp 34-42) apply to their high gain radar head-echo ALTAIR system, shouldn't Chau and Woodman at least address the issue of bias correction? (Now that it is published, this reference should be included in the current paper). It may not be necessary to de-bias the results now in this paper, but a warning

should be made that the data probably do not represent the true distribution, and (if this is what the authors intend) that digging out the true nature of the meteoroids will be dealt with in the future. It is nice to see, however, that the current results appear to match the observations of others before they account for biases.

With the addition of something about biases, I recommend publication of this paper. However, I also recommend some minor corrections to language.

1. I am embarrassed to say that I spent considerable time trying to figure out what weird radar units were being used on Page 6066, in lines 26 and 27 - 300mx and 75mx. I finally realized that the x is symbolic for 'by'. For stupid people like me, use a capital X and separate it from the units: (300 X 300) m, or 75m X 75m.
2. Run a global "find" on the paper to ensure that every time 'respect' is used, it is preceded by 'with' and followed by 'to'. It should always be 'with respect to'. There are numerous places where this is not the case.
3. Throughout the paper both the Leonid and control or non-Leonid nights should be referred to as nights - not 'control day'.
4. Throughout the paper use either Apex or Earth's Apex, but not Earth Apex.
5. Page 6064, line 9. 'transits' not 'transients'
6. Page 6065, line 27. 'between 90 and 120 km', not 12 km.
7. Page 6071, line 11-12. Replace 'that we still do not understand its origin' with 'whose origin we still do not understand'.
8. page 6073, line 3. 'decelerations are', not 'decelerations is'.
9. Page 6074, lines 14-16. Replace 'hour angle' with 'RA' and declination with 'Dec'.
10. Page 6074, line 16. Drop the word 'it' from 'As it can be seen ...'
11. Page 6074, line 17. It should read 'the Leonid night. Moreover, '

12. Page 6074, line 22. 'Astronomers' should not be capitalized.
13. Page 6075, line 4. Drop the word 'it' from 'As it can be observed ...'
14. Page 6075, line 8. 'coming from Leo. However, we observed'
15. Page 6075, line 9. 'days after the Leonids (not ...'
16. Page 6075, line 26. 'We have shown that the majority of echoes ...'
17. Page 6077, line 14. 'to results reported', not 'to result reported'
18. Page 6077, line 16. 'during both Leonid and control nights are ...'
19. Add the new Hunt et al. citation to the references.

Interactive comment on Atmos. Chem. Phys. Discuss., 3, 6063, 2003.

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