

DISCUSSION CONCLUDING AAS 11-676

The need to broadcast DTAI (TAI-UTC) was questioned because it is such a slowly changing quantity. Arnold Rots responded that the broadcast of DTAI was needed because it addresses a software management issue: if DTAI is included in future timing broadcasts, then any software that uses the information will automatically pick up the leap seconds. If leap seconds have to be manually inserted into software systems, a software-change request must be submitted every time a leap second is introduced because files need to be updated and tested.

George Kaplan asked about the astronomical communities that perform studies involving precise radial velocity (*e.g.*, exo-planet studies) and whether they might need to know the Earth rotation rate very accurately. Terrett suggested that these studies may be spectroscopic in nature and therefore may not be overly sensitive to UT1-UTC. Allen noted that barycentric corrections must be applied in the analysis of exo-planetary data but the accuracy requirements are on the order of 5 to 30 seconds to keep the barycentric correction from introducing unwanted noise. After some discussion of relative versus absolute measurements, Rots clarified that the point is that an observer's velocity vector along the line of sight is not going to change very much in one second. It is assumed that observatories that do these analyses are aware of DTAI whether or not leap seconds are being introduced.

Rob Seaman noted that effectively Rots had conducted another survey, internal to SAO. With this understanding, Seaman asked if Rots had any sense of the degree of attention his respondents were giving to the issue, given the fact that many respondents were apprehensive to change and that many of Rots' reported responses were seemingly terse. Rots confirmed that it was his impression that, on the whole, there is not much awareness of this issue, a typical response perhaps being "Oh yeah, there is something like that going on; we aren't worried much about it but it would be nice if you didn't change it [UTC]." Nevertheless, because of the way the vast majority of SAO systems tend to work, he supposed that changes to the definition of UTC will not be much of an issue either way. What seemed to be of much more concern was the possible confusion that would result; the one thing that is generally understood by people with any sensibility of timekeeping and time scales is that UTC is approximately UT1.

Reed commented that it was his impression that there is a conversion of American Association of Variable Star Observers (AAVSO) data to Terrestrial Time (TT) or the equivalent and in that sort of situation the cessation of leap seconds should provide reduced complexity. Rots replied that coping with leap seconds has not seemed to be a problem in those situations; also, there are probably observers in such programs who might become more confused by the disappearance of leap seconds in UTC. John Seago asked if more or less confusion might result if the terms "UTC" and "Coordinated Universal Time" were discontinued along with the leap second. Rots replied that the absence of something called UTC might be even more confusing to some observers.