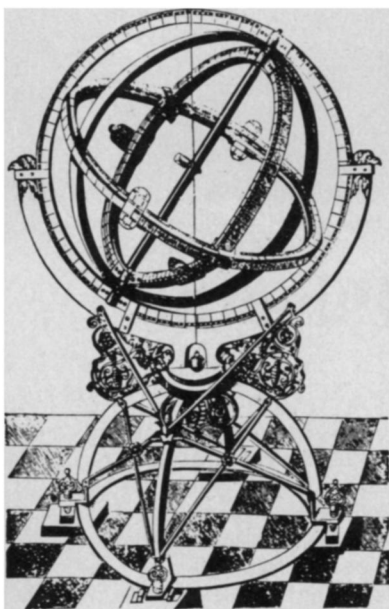


A Special Section on Astronomy



A muse named Urania

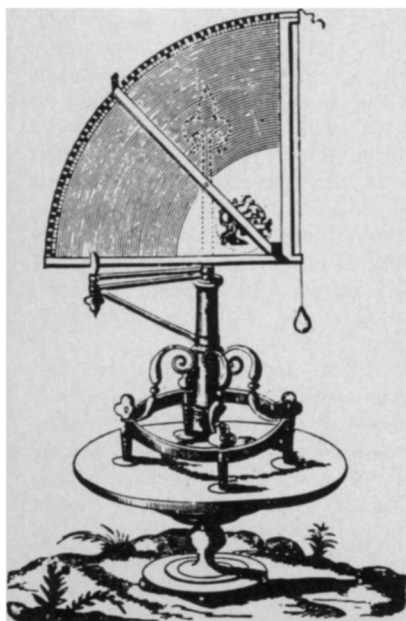
The ancients considered astronomy one of the liberal arts. In medieval times astronomy was part of the quadrivium, the upper division of studies leading to the baccalaureate degree. A most necessary characteristic of an art presided over by a muse is beauty, and the beauty of astronomy ought not to be forgotten. Not merely the visual beauty of the heavens nor the scenic beauty of the places where astronomers are fortunate enough to work. We speak here of what the ancients called the music of the spheres.

In the motions and relations of the heavenly bodies ancient philosophers found a similarity to the mathematical relations among notes in a harmony. It was this celestial music that they sought to hear and understand. The idea of the music of the spheres comes down to modern times: The first line of Goethe's "Faust" (of the "Prologue in Heaven," that is) runs: Die Sonne tönt nach alter Weise; the sun resounds with her age-old note. Echoes of the music can be heard in the mathematics of a Newton, an Einstein, a Schwarzschild, a Friedmann, and indeed survive even in the ephemeris tables.

Another characteristic of the celestial muse is serendipity. Inspiration strikes unexpectedly. Astronomy is the science of serendipity. People who look for one thing find another. People who weren't sure they were looking for anything make important discoveries. New looks at old records bring to light new phenomena.

And that brings us to the putting together of this special issue. As we thought about it, we began to see that there just wasn't room for a detailed, encyclopedic review of all parts of astronomy. Nor did a connected series of articles on one specific topic seem appropriate. So, in a serendipitous mood appropriate to the subject, we set out on a tour of three of our largest observatories to talk to astronomers about what they were doing. From the national observatory on the holy mountain of the Papago Indians to the smog-filled valley of Pasadena to Santa Cruz with its honky-tonk boardwalk and almost frighteningly beautiful campus we found a variety of interesting things thanks to the kindness of many people, including more than a dozen astronomers who gave of their valuable time to talk to us. In these pages we present a short review of the questions now pending in astronomy, some items from the recent news, and some of the results of the tour, altogether a sampling of current work addressed to pending questions.

—Dietrick E. Thomsen



august 18-25, 1973

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