

isfaction with the existing texts on the market: 95 per cent of the students across the country were taking astronomy without having any contact with astronomical observations, the sky, or the measurement-inference process that is at the heart of science. I had no success in trying to graft one of the existing “lab” manuals onto my lectures, so I ended up writing a book in which some observational activities were integrated into the text itself where appropriate. Now my students can acquire some of the knowledge in the syllabus by astronomical investigations — the active discovery process advocated by Piaget and other cognition researchers, as opposed to passive lecture experiences. Not all of the material can be taught by discovery methods, but I am very happy with that portion that can be structured in this way and the student response has been very favorable.

Textbooks: A Survey

After the panel and open discussions on textbooks, John Stull and Scott Weaver of Alfred University, Alfred, New York 14802, kindly prepared a questionnaire on textbooks, and collected and analyzed the results. [The Organizing Committees are grateful to them for undertaking this survey.] The following is a summary of their report.

Responses were received from 23 people from 14 countries. Although this limited response precludes meaningful generalization, it generally supports the views expressed in the panel discussion. U.S. texts, with their frequent editions, up-to-the-minute information and many illustrations (frequently in color) are not only inconvenient for non-English speakers, but also out of reach in countries where dollars are scarce. They may also have an annoying amount of cultural and geographical bias. The lack of locally-written texts adds to this difficulty. Many non-U.S. respondents indicated that they write and distribute lecture notes; these notes may eventually be the basis for locally-written texts. The main problems of textbooks may well have been identified at this Colloquium, but were by no means solved. Further thought and effort seem justified.

Discussion

H.F. Haupt: *Comment on “Textbooks” from a non-American in a non-English speaking country:*

- *at the university in Austria, we teach only science-majors*
- *we mention a few (a dozen) textbooks (both in German and in English) that students can look into at our libraries; but normally students will not buy these*

- *we (as teachers) extract from those textbooks and from our own experience and put out lecture notes*
- *these lecture notes are more or less obligatory for the students; they can be obtained at very low cost.*

L. Gouguenheim: *The situation in many countries outside North America is quite different. The students are not expected to buy a textbook, or to follow a specific one. In France, generally the students are given typewritten lecture notes from the teacher together with a rather large bibliography (including generally French and English language books). They also have access to a library. N.B. Astronomy courses at various university levels concern only science students.*

J.-C. Pecker: *We often (in France, in graduate school) do not use any particular book, but like better to send the students to bibliographical sources (documentation of all kinds, Annual Reviews, even original papers, be it in English, or French, or else...).*

L. Houziaux: *Along the same line as the previous comment, I would like to stress that the situation about textbooks is very different in U.S. or in Canada from other parts of the world and namely in Continental Europe, where astronomy is not taught to non-science major students. And these students represent a huge part (90 per cent) of the American market.*

Therefore the textbooks for astronomy teaching in universities in Europe rely on quite a different knowledge of physics and mathematics. Therefore the structure of the textbooks is very different. Production costs are very high and the market is very restricted, of the same size about as books published in the U.S. for graduate students in astrophysics.

P. Legault: *Laurentian University is a bilingual university, both French and English being used. Many English textbooks exist but only a few French ones, mainly for science students. Most of my students are non-science students.*

J.V. Narlikar: *My experience of writing an astronomy text in the Marathi language illustrates some of the difficulties of producing books in native languages in under-developed countries. Publishers (private) do not wish to undertake such books as they are not sure of making any profit. My book was brought out by a Government literary agency. It was a reasonably produced, moderately priced book, but the agency had no mechanism of making it available to the general public through retail outlets.*

Such agencies therefore do not do the "publisher's" job. A private publisher is anxious to publicize through reviews, advertisements, etc., which an official agency does not do. Can we think of IAU sponsorship for such books? Some mechanism for giving incentives to publication of astronomy texts needs to be evolved.

B.G. Sidharth: *In India, there are a number of textbooks geared to astronomy cur-*

ricula that are deplorably bad, but make good economic sense from the publishers' point of view. On the other hand, there is a definite market for good astronomy textbooks outside the stream of a formal curriculum, and there are enough authors, but no publishers because they are not confident of returns.

H.S. Gurm:

- 1. Much of the discussion has been about high school courses or courses for non-science major students of astronomy. Presently, we have either books for introductory and popular astronomy or symposia. There is a dearth of textbooks for those majoring in astronomy or for courses like that offered by University College London.*
- 2. The book business is in a crisis in the developing countries. Most of the booksellers collect remainders from the west and dump them in the third world. For example, Pasachoff's paperback (an older edition) was sold in my town by a bookseller for 70 Rupees (about \$5.00). How about having cheap editions for the third world? It could be initiated through U.S.-held rupee funds in India.*

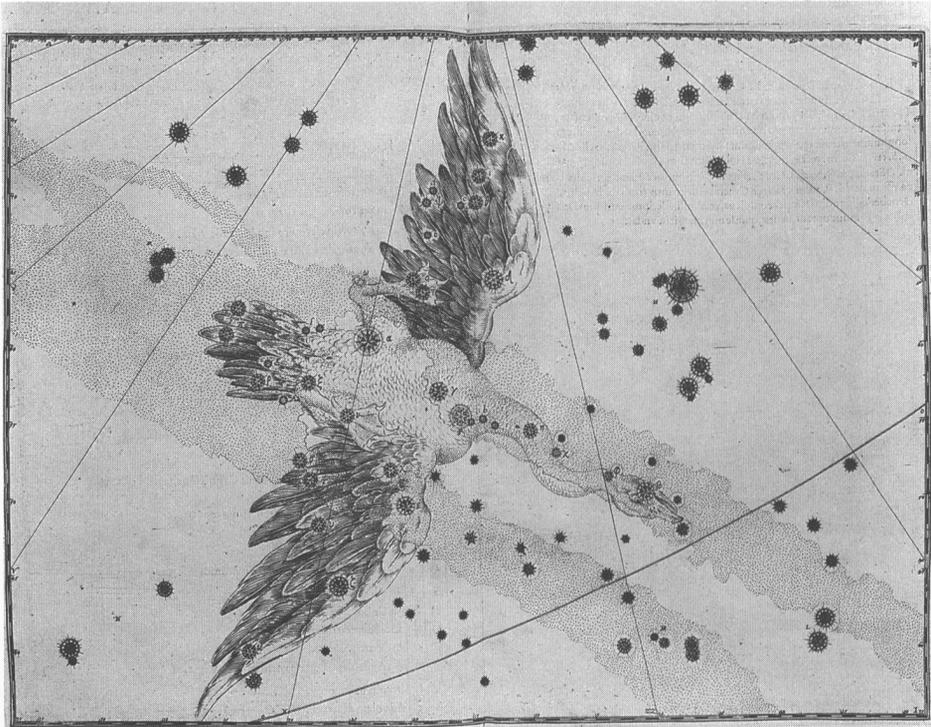
S.E. Okoye: *I would also like to draw attention to the cultural dimension of textbook writing. It is our experience in Africa and other developing parts of the world that the cultural background and orientation of authors affect the way they present their materials and this can be limiting for readers of a different cultural background. The tendency now is for the local readership to prefer textbooks written by local scientists.*

The second point relates to the worsening economies of the developing countries, which has made imported books too expensive, and almost unaffordable. This further provides an additional motivation for local textbook writers. But alas, the incidence of book piracy in some countries, arising from the same poor national economies, tends to work against the emergence of local textbook writers.

G.A. Carlson: *I appreciate the number of excellent astronomy textbooks on the market. It allows me the option of changing texts every three years or so. By doing this, I keep current on most aspects of general astronomy. I feel that each author is strong in certain areas. By changing texts, I feel I do a better job of teaching.*

J.C. LoPresto: *What about having a text "on line" for computer subscription?*

J.M. Pasachoff: *I suspect that not enough students are "on line" to make it worthwhile for mainline publishers to make their texts available in this way. Further, current computer systems do not have adequate picture quality. I await the availability of CD-ROM.*



Cygnus, by Alexander Mair; Plate in *Uranometria*, by Johann Bayer. Collection of Jay M. Pasachoff. Further information on page 435.