

ACCESS TO JOURNALS

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We want to help scientists in developing countries (DC) do research because of their intelligence and devotion to science. But frankly, observational and even theoretical research is very expensive. For a developed country an estimate of the average project cost that includes salaries, the equipment used, and the institutional overhead is roughly \$100,000 (US). In DC the salaries are lower, but not necessarily the equipment.

How can we help astronomers in DC engage in such expensive activities? I will discuss only the publication and library costs.

I canvassed six journal editors regarding their policies regarding DC and am indebted to them for their honest statements. They were the editors of A&A, AJ, ApJ, Icarus, MNRAS, and PASP. Three of these have no page charges and the other three generally waive the charges for astronomers in DC, which are defined primarily as India, China, Indonesia, most of South and Central America, eastern Europe, the near east, and Africa except for South Africa.

Regarding subscription rates, journals are distributed to DC either free, at reduced (member) rates, or at full institutional rates. Table 1 gives the distributions.

TABLE 1. Table 1. Subscription Rates to DC for Six Journals

Rates	A&A	AJ	ApJ	Icarus	MNRAS	PASP
free	few	few	few(35)	few	few(40)	few
reduced	most	none	most	none	none	none
full	none	most	none	most	most	most

However it should be said that although AJ and PASP charge full rates, those are less than \$500 (US) per year.

How large are these rates (including surface postage) for a typical DC? Table 2 shows the data (in US dollars) obtained from one large DC library during three different years for some of its active subscriptions. The numbers marked by colons do not necessarily include postage. That library has a total budget of \$24,100 for 1998, so these nine sets of journals absorbed 59% of the total.

For financial reasons that library had to terminate subscriptions to the journals listed in Table 3 to which it would have liked to subscribe.

Those six journals would have taken more (\$14,674) than the remaining library budget, leaving nothing for books and other astronomy and physics journals.

The reason for the selection of journal subscriptions is easy to guess. If one computes the subscription rate per normalized 1000-word page, the five society publications in Table 2 range from \$0.02 to \$0.32 per page while those in Table 3 range from \$2 to \$25 per page.

We conclude that the major general astronomical journals have been doing well in aiding research in DC.

TABLE 2. Table 2. Active Subscriptions in a Typical DC Library

Journal	1993	1996	1998
A&A + A&AS	\$3108	\$4740	free
AJ	360	405	\$492
ApJ + ApJS	394	582	664
ApSS	3560	3610	3564
Cel. Mechanics	1300	1302	1302
Icarus	1760	1975	1761
MNRAS	2100	free	3462
PASP + Mercury	190	288	349
Solar Physics	1143	2609	2628
Total	13915	15511	14222

TABLE 3. Table 3. Terminated Subscriptions

Journal	1997 Rate
Advances in Space Research	\$2024
Comments on Astrophysics	1445
Earth, Moon & Planets	1205
Fundamentals of Cosmic Physics	1807
Geophys. & Astrophys. Fluid Dyn.	6024
Planetary & Space Science	2169