

Astronomy and Astrophysics: To Be an Editor

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Founded in 1969, *Astronomy and Astrophysics* has grown fast and is now one of the four leading international journals in Astronomy. It is sponsored by no less than 16 European countries. Without the Supplements, it publishes about 950 papers per year, over 8,000 pages totalling 70 millions of characters; the *Astrophysical Journal* publishes about 100 millions of characters per year while the *Monthly Notices of the Royal Astronomical Society* and the *Astronomical Journal* contain slightly more than 30 millions each. As to the Supplements of *Astronomy and Astrophysics*, they publish about 150 papers per year totalling 2400 pages, against 100 papers per year over 3000 pages for the *Astrophysical Journal Supplements*. These numbers reflect roughly the populations of astronomers in the respective countries with, however, some advantage for the American journals as a number of European astronomers who have apparently not yet discovered the merits of *Astronomy and Astrophysics* and of *Monthly Notices* still prefer to send their papers to the *Astrophysical Journal*, while the reverse is true in only a few specialized fields.

Processing all these papers is a considerable task requiring a fair amount of organization. As I have been involved in this business for more than 6 years as one of the three Editors of *Astronomy and Astrophysics*, I thought that it would be interesting to share my experience with the readers of the *Messenger*. Apparently there are no considerable differences in the way the four major astronomy journals are run, as far as the papers are processed, so that my experience should have some sort of general character.

Let me explain first how the Journal works administratively and financially. *Astronomy and Astrophysics* is directed by a Board formed of astronomers representing the 12 (soon 13 with Czechoslovakia) participating countries. The Board meets annually and takes all decisions concerning finances and policy, including the contracts with the publishers and the designation of the editors. The contributions of the member states together with the relatively small income from page charges paid by non-European authors are administered by ESO and are used to finance the running expenses of the three offices and the salaries of the secretaries. From time to time an extra issue can be paid on money drawn from the reserves of the Board, in order e.g.

to reduce the publication delay by absorbing a part of the backlog. The publication and distribution of the Journal itself is entirely subsidized by the income of the subscriptions which is received directly by Springer Verlag for the Main Journal and by Les Editions de Physique for the Supplements, respectively. The subscription rates and the number of pages published every year are fixed by a contract between the Board and the Publishers. This system is rather different from e.g. that of the *Astrophysical Journal* for which all the income comes from the subscriptions and (to a large extent) from the page charges. Both systems have advantages and inconvenients that I cannot discuss here.

Let me come back to the actual work of an Editor.

First, the authors choose to which Editor they will send their paper. The papers intended for publication as Letters are in principle sent to Stuart Pottasch in Groningen; those intended for the Supplements should go to me in Meudon and the "normal" papers either to Michael Grewing in Tübingen or to me. Many papers submitted as Letters end up as normal papers when they are not considered as very urgent (then Stuart forwards the complete file to me); the reverse is rare. There are also exchanges between the Supplements and the Main Journal. The German authors tend to send their papers to Michael and the French ones to me but there are many exceptions. At present the balance between the normal papers received on both sides is roughly even.

Then the job starts. I first eliminate at once the obvious "crackpot papers" mostly dealing with gravitation, cosmology and cosmogony. They are surprisingly rare (apparently there are not so many misunderstood geniuses in astronomy); the story ends up with a kind letter to the author. The most delicate part is the choice of the referee. We usually use only one referee, but two for the Letters. In rare cases, I referee the paper myself if I feel competent. An ideal referee should be competent, fast, honest, willing to help the author rather than to crush him, kind but firm. These qualities must be less rare than one would think as my computerized referee file contains as many as 1800 names (over some 7000 active astronomers in the world). Of course some referees are better than others and I keep in the computer my confidential evaluation of the work everyone is doing (yes, many

of you have police records in my office!). Choosing the referee is a very subjective affair requiring experience and knowledge of the community. Fortunately astronomers seem to behave better with each other than e.g. biologists, probably because there is less money involved behind their science! I would not dare to say that there are no "chapels" in astronomy but most often the problems are kept within the limits of courtesy.

The most difficult thing with the referees is to obtain their answer! We have an automatic reminder system to send them telexes, faxes or phone calls at regular intervals but this is not always efficient. If after some time we consider that the answer will not come I look for another referee, putting some pressure on him (or her) to obtain a fast reaction. Sometimes his or her comments come together with those of the first referee! The worst case (fortunately rather rare) is that of some referees who write on the acknowledgement card they are supposed to send on receipt of the manuscript that they are very interested and willing to referee, but then don't do anything. Understandably, I hesitate in such cases to contact another referee as early as in other cases and this means more time lost for the author. I hope that the readers of the present paper will sympathize with my difficulties although it is not at all pleasant to be a victim of those extra delays.

The comments of the referees come in an astonishing variety, from those who produce extremely detailed reports and even correct entirely the language of the paper, to those who say only "OK, this should be published" (or rejected) or only remark that a paper of theirs should be cited by the author! I have not been able to discover a rule for this behaviour: there are very busy people with heavy responsibilities who take their job quite seriously and are very helpful, while others do very little. The younger referees are doing somewhat better than the older, although they may be unexperienced. Surprisingly at least 3/4 of the referees allow the Editors to communicate their name to the authors, even if their report is rather harsh.

Anyway, the referees give only advice and recommendations: the Editors are taking the decision and do not necessarily follow the referee. We may call for another referee if we think that this is useful, etc. Sometimes the referee may ask to see the paper several times when this does not really seem

necessary: then we don't comply, especially if we suspect that this might be a way of delaying the publication of the paper (such cases do exist but are fortunately quite rare). In general the system works well and results in substantially improved papers. The rejection rate is only about 11 per cent (not including the papers rejected initially but eventually accepted after major changes). This may seem small in comparison to physics, chemistry or biology journals where the rejection rate oscillates between 30 and 50 per cent or more, but I must stress that the other major astronomy journals do have rejection rates similar to ours. I believe that journals in other disciplines may use different principles: they often seem to accept the paper or reject it at once, and in the latter case the authors submit it essentially unchanged to another journal until it is eventually published. This is possible because there are many journals in those fields while we have only a few, but at the end the paper is not much improved while we succeed in having many of our papers made substantially better.

I must confess that I do not actually read all the papers. This would be physically impossible (the job takes already at least 1/3 of my time). In many cases a cursory look through the paper when reading the referee's report seems sufficient. But there are cases where I have to spend many hours on a single paper. I have even rewritten a few myself to a large extent when I saw that there was something good in the science but that the author was unable to express it properly. Not unexpectedly, this is often the case with papers from Eastern countries, particularly China, due to language difficulties; I even wonder sometimes if some authors don't have a different way of thinking! This does not make me at ease as I strongly believe that there cannot be several kinds of scientific logics. In such cases there may be several iterations before coming to a publishable paper. If the paper is understandable but written in poor English, I simply send it for rewriting to a native English-speaking astronomer. I must say that since the birth of Astronomy and Astrophysics 22 years ago astronomers from Western and even Eastern Europe have made considerable progress in writing English; if not always completely correct (in particular the result is often a mixture of English and American), the language is most often quite understandable. Of course purists would like to see only papers in superb English (or American? which to choose?) but we do not have the means to achieve such a result, especially as the rewriter must necessarily be a cultivated astronomer.

At the end of the process, every

manuscript accepted by one of the Editors is seen by the other one for a check (he has a complete copy of the file): there are a few cases where we have discovered a problem at this late stage. Also, the advice of the other Editor is very welcome in marginal cases where it is better to have the responsibility shared! Then all manuscripts (except those of the Letters which are made camera-ready by the author) end up in our office in Meudon where they are prepared for edition by my two secretaries, Bernadette Perche and Monique Rougeot, and then sent either to Springer-Verlag in Heidelberg for the Main Journal or to Les Editions de Physique near Paris for the Supplements. I take the opportunity to express my appreciation of the excellent work of the two secretaries, who not only make the final preparation of the manuscripts but follow them at all stages while receiving the complaints or questions of the authors and sometimes of the referees, typing and sending innumerable letters and reminders and also adapting to the somewhat irregular schedule and changing mood of their Editor or of his occasional substitute! There are also a competent secretary in Tübingen and a half-time one in Groningen, who are not sitting idle either!

Those authors who use the Springer-Verlag T_EX or L_AT_EX macros to prepare their manuscripts are well aware of the corresponding advantages: their papers will look exactly like the manuscript (but proof-reading is still in order to check if the figures are put at the proper place and in general if there has not been a problem in the layout), but also they benefit from a substantial reduction in the publication delay (say 3–4 months after acceptance instead of 6–7 months for normal papers). Also this alleviates the burden of our secretaries and allows costs savings for publication, resulting in more pages published at the same cost for the subscribers. This is certainly the solution for the future and we are glad to see the fraction of such papers increasing (it reaches presently about 15 per cent of the total). The authors should also be aware of the *Research Note* formula. Research Notes are short papers which either contain results whose publication is not sufficiently urgent to justify a Letter, or short follow-up of previously published papers. They are used by Springer-Verlag to complete the issues which for technical reasons must have a number of pages multiple of 8. Thus Research Notes may – or may not – benefit from a reduction in publication delay.

To end, I would like to offer a few reflections concerning the future. The size of all astronomy journals is in-

creasing continuously, not because the number of astronomers is increasing (it has been quite steady on the average during the last years) but because they have available more and faster observing means and computers, hence an increased productivity. Will the conventional way of publishing the results on paper remain appropriate? There have been many suggestions for alternatives. Microfiches is one that we use for big data sets in the Supplement Series. Data too big to be published on paper can also be stored at the Centre de Données Stellaires of Strasbourg, which distribute them on magnetic tape on request. But this is not appropriate for the normal papers. Editing all papers on microfiches is an interesting possibility for saving storage space (the Astrophysical Journal indeed has an edition on microfiches). However, while this can be useful for long-term archiving, it is not very practical to read microfiches of the papers just published: you need to have the microfiche reader at hand, and paper reproductions of microfiches are expensive and often not of high quality, especially for the half-tones. Moreover, the authors like to see their production printed on paper, and this is a psychological fact one cannot flatly ignore! For the same reasons, we are still a long way from a computerized journal. It is clear that papers can already be memorized in computers and can be made accessible to the community through computer networks. However, a general use of this system would mean a substantially increased charge on both the computer and the network, would require a graphic display for the figures (and what about half-tones?) while access and even reading is not going to be as fast and as convenient as for a printed issue. Moreover, even if you have a graphic terminal at home you will still not be able to read your favourite journal in the train or in the plane! Finally, this solution would be very unfair to countries and individuals whose access to a worldwide computer network is still limited or impossible. For all these reasons, I believe that there are still many good days for the conventional way of printing and distributing paper journals. I tend to believe that the substitute (which will no doubt come eventually) will be a dense individual support like an optical disk distributed by mail, that will be read on unexpensive portable lap computers with high-quality displays, of the size of a present paper issue. Perhaps such devices already exist or will be soon available. If this is the case, we have to contemplate seriously the substitution of the cumbersome paper journals by such devices. Will this be before I retire?