

I(b). STYLE BOOK  
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## A. HOW TO PREPARE MANUSCRIPTS FOR PRINTING

## I. GENERAL CONSIDERATIONS

The *presentation* of a scientific article is, for the reader, almost as important as its scientific content. Even though it is difficult for the editor to influence the style, clarity or logic of the author, at least a certain number of rules of presentation, based both on experience and logic, can be put forward and should be followed.

Some of these rules, which imply the observance of international rules of standard notations, etc., should be regarded as imperative. These will be indicated in the text below by a marginal tick (✓) and will be commented upon in order to explain why the International Astronomical Union considers them imperative.

Certain other rules are simply *recommendations*; they are not strictly imperative and their aim is essentially to improve the homogeneity and general level of the publication. It is important to point out that a badly-prepared text means numerous corrections on proof, corrections which are very expensive; the IAU would obviously prefer to economize as much as possible in this respect in order to organize more symposia, for example. The Members of the Union can assist the Secretariat in this matter by the way in which they prepare their manuscripts.

A manuscript passes through the following channels:

- |  |   |  |
|--|---|--|
| <i>Author</i><br>(Auteur)                          | — | Prepares manuscript according to rules recommended by the IAU.   |
| <i>Scientific Editor</i><br>(Editeur scientifique) | — | Modifies, if necessary, the manuscript as regards its scientific and formal contents, in such a way as to satisfy the requirements of editorial clarity. |
| <i>Sub-editor</i><br>(Editeur administratif)       | — | Takes responsibility for all sub-editing.  |
| <i>Printer</i><br>(Imprimeur)                      |   |  |
| <i>Publisher</i><br>(Distribution)                 |   |  |

It is evident that, at the earlier stages, the principal concern should be to prepare the manuscript in such a way as to avoid any possibility of *ambiguity* being passed on to the following stages. Thus the editor should mark the manuscript in such a way that the material when typed is clear to the sub-editor (example: the letter B should be typed normally if it is the abbreviation of a spectral type, and the letter will thus be printed in roman; but this letter should be underlined if it refers to a colour of the UBV system, so that the letter will be printed in italic type.)

*Rules for the author.* (See below, para. 2, p. 103.) The better these rules are observed the easier the work of the editor and the editorial office of the IAU will be, and the sooner publication will take place. The observance of these rules will result in a typed manuscript with a minimum of marginal instructions and with no indications of a typographical nature shown other than in black pencil.

*Rules for the scientific editor.* (See below, para. 3, p. 108.) Although the scientific editor is not concerned, himself, with matters of typography, he is concerned with notations, with, if possible, the checking of the bibliography (that is, the checking of the work of the author), and with ensuring that there is no danger of misinterpretation by the editorial office. He should also, to a certain extent, be responsible for the scientific content of the article and, if necessary, exchange correspondence with the author in order to arrive at modifications, major or minor, in the content.

*Rules for sub-editing.* (See below, para. 4, p. 109.) The IAU editorial office has then to prepare the manuscript for publication; the rules for this preparation are very strict, for it is necessary for the printer to be able to follow the manuscript blindly. The size and style of characters, the spacing, indentations, etc., are determined by the sub-editor, in conformity with the rules used in the printing profession. Naturally, it is necessary to come to an agreement with the printer concerning certain uniform rules for the presentation of articles in journals or of a particular series of volumes. The rules need not be brought to the attention of authors or scientific editors and are therefore not given here in detail.

## 2. RULES FOR AUTHORS

### (a) Presentation

- ✓ **The first imperative requirement is that the manuscript be submitted in ample time.** The manuscript should include: title (brief), full name of the author, the author's "home" institution, country of the author, summaries (in the case of contributions to a Symposium, but not in the case of reports of Presidents of Commissions), text of the article or report, bibliography, tables and graphs, figures, captions.
- ✓ **Texts should be typed double or triple-spaced, so as to permit the editors to make the necessary corrections on the manuscript. Ample margins of 3 cm should be provided at both sides of the page.**
- ✓ **Typing on both sides of the paper is strictly forbidden.**

No indication of a typographical nature should appear, either typed or inserted by hand in ink, on the manuscript. This latter rule is often not observed. Many letters are underlined with the typewriter so that they are printed in italics. This practice is unsound; typographical indications should be put in red, by the sub-editor only; if they are typed in, there is risk of confusion. Example: for vectors, authors should do nothing but place (in black pencil only) a bar or an arrow over the symbol which should be printed in bold-face. If the author types  $\underline{m}$ ,  $\bar{m}$ , this will be printed as  $\underline{m}$ ,  $\bar{m}$  and not  $m$ ,  $\mathbf{m}$ .
- ✓ **It is the sub-editor who should indicate  $\underline{m}$ ,  $\bar{m}$ , by the appropriate underlining in red; the most useful thing the author and scientific editor can do is to put any typographical indications they may wish to give in black pencil only.**
- ✓ **Neither red ink nor red pencil should be used, this colour being reserved for the sub-editor (IAU Secretariat).**

### (b) Summaries

The IAU (*Trans. IAU*, 8, 1952, p. 68) recommends that articles submitted for publication in a Symposium volume should be accompanied by a summary in the language used by the author, and if possible by the translation of this summary in another language. The ideal would be for each article to be accompanied by summaries in the two official languages of the IAU, French and English, and also, if possible, in Russian or German.

A summary should be concise, clear and comprehensive. It is not a table of contents; it should summarize the substance of the conclusions.

### (c) Figures

The IAU requests from authors finished figures. They should not have to be re-drawn. The following should also be taken into consideration:

- ✓ (i) Figures should be drawn in Indian ink on white mat paper, or tracing paper; hatching or cross hatching is permissible but any shading can only be done by indicating the area to be stippled on a separate trace.
- (ii) Figures should include accurate and clear lettering; if the author can do this, or have it done correctly, this is desirable; if not, it is better to leave the indications in pencil.
- ✓ (iii) **The width of the drawing lines should be calculated in such a way that, after photographic reduction, the figure is, at most, about 12 cm wide and 8 cm long.** Only very detailed figures can be enlarged to a whole page (i.e., 19 cm × 12 cm) (Table 1). Authors should prepare figures so that after reduction the bottom of the figure corresponds to the bottom, and not to the side, of the page.

**Table 1**  
**Sizes of letters and lines on the original drawing**

Size of figure before reduction cm × cm	Reduction factor to	Typical line width				Typical letter height	
		frame		drawing (in mm)		mm	
40 × 60	1/5	1.5	to 2.0	0.8	to 1.5	5	to 10
32 × 42	1/4	1.2	1.5	0.6	1.2	4	8
24 × 36	1/3	0.9	1.2	0.5	0.9	3	6
20 × 30	2/5	0.7	1.0	0.4	0.7	2.5	5
16 × 24	1/2	0.6	0.8	0.3	0.6	2	4
13 × 20	3/5	0.5	0.7	0.3	0.5	2	4
12 × 18	2/3	0.4	0.6	0.2	0.4	1.5	3
10 × 15	4/5	0.3	0.5	0.2	0.3	1.5	3

Letter heights of:      10 mm                  8 mm                  6 mm                  5 mm

**A3      H7                  F4                  M5**

4 mm                  3 mm                  2 mm                  1 mm

**A7                  D5                  T4                  N4**

Line widths of:      1 mm      0.8      0.7      0.6      0.5      0.4      0.3      0.2



- ✓ (iv) **Captions should be typed on a separate sheet of paper.**
- (v) Plates should be provided on glossy paper, glazed, with normal range of contrast.
- (vi) The author will mark on his manuscript the location he suggests for figures.

## (d) Tables

(i) For presentation, tables should have titles.

(ii) Tables should not be too large in width (take into account decimal points, intervals, units, etc.). Authors should prepare tables in such a way that the editor is not obliged to suggest a break in the table; such a break is not desirable and it involves an expensive correction. In order to save space, column headings should be abbreviated; figures in brackets might be used to refer to useful explanations given as notes at the bottom of the table.

If the table has to be cut in two and divided between the left-hand and right-hand pages, for example, the same numbering of lines repeated on the two sides should be made to correspond without ambiguity on the two parts of the table.

## (e) Bibliography

(see also Section D, p. 120)

The rules of bibliography should be very carefully observed; bibliographies are intended for use; whimsical or translated abbreviations, incomplete or erroneous references serve no purpose. For this reason, authors should verify all references by referring back to the original publication and should avoid quoting second-hand references without checking them.

Moreover, bibliographies should permit the addition of a reference to a list without changing the whole system of numeration, which is a source of considerable error.

(i) For this reason, the system of alphabetical references is highly preferable. The following particulars should make possible the establishment of **an alphabetical bibliography** ("Harvard" system) at the end of an article.

*A single author.* If several references are given, they should appear in chronological order.

*Two authors.* References should appear alphabetically, according to the spelling of the name of the first of the two authors, as they are given in the original article; in each alphabetical group chronological order should be observed. In the text one should mention the names of the two authors, and the date, and should avoid replacing the name of the second author by *et al.*

*Three or more authors.* Only the name of the first author should be quoted in the text (followed by *et al.*). The placement of the article quoted in the list of references should be independent of the names of the two (or more) co-authors of the article.

"... The abundances derived from the chromosphere and lower corona (Pottasch 1963a, 1963b) are of the order of 20 times that given for the photosphere by Goldberg *et al.* (1960). However, Goldberg and Müller (1959), Goldberg and Aller (1960), Goldberg *et al.* (1962), found that ..."

Goldberg, L., Aller, L. H. 1960, *Astrophys. J.*, **131**, 213.

Goldberg, L., Müller, E. A. 1959, *Mon. Not. R. astr. Soc.*, **121**, 733.

Goldberg, L., Müller, E. A., Aller, L. H. 1960, *Astrophys. J. Suppl.*, **5**, 1.

Goldberg, L., Aller, L. H., Müller, E. A. 1962, *Ann. Astrophys.*, **27**, 391.

Pottasch, S. R. 1963a, *Astrophys. J.*, **137**, 945.

Pottasch, S. R. 1963b, *Mon. Not. R. astr. Soc.*, **125**, 543.

For an author who is pressed for time and who does not wish to make the effort of arranging the bibliography alphabetically, the following solution (which also permits an easy modification of numeration, in case of additions) is acceptable, but only if necessary.

"... The abundances derived from the chromosphere and lower corona (**12**, **13**) are of the order of 20 times that given for the photosphere by Goldberg, Müller and Aller (**14**) ..."

**12.** Pottasch, S. R. 1963, *Astrophys. J.*, **137**, 945.

**13.** Pottasch, S. R. 1963, *Mon. Not. R. astr. Soc.*, **125**, 543.

**14.** Goldberg, L., Müller, E. A., Aller, L. H. 1960, *Astrophys. J. Suppl.*, **5**, 1.

It is sometimes useful to have the title of the article mentioned in the bibliography; this practice is clearly becoming rare, but when this mention is made, the bibliography can almost be used directly, without reference to the text; this is convenient, especially in the *Draft Reports*.

In any case, the IAU strongly requests authors to use the alphabetical system described above and, in no case, any system other than the two mentioned above.

(ii) *Presentation of references.* General rules inspired by the principles of the *World List of Scientific Periodicals* will be followed, with some simplifications. The list page 74 (see p. 120) is a good approximation of it. This list will be improved in the next edition of the IAU Handbook. It is governed by the following *imperative rules*:

( $\alpha$ ) Abbreviated words follow the word order of the whole text of the title.

Example: *Mon. Not. R. astr. Soc.* = *Monthly Notices of the Royal Astronomical Society*.

( $\beta$ ) Titles in Russian, German, etc., should be abbreviated in their original language, with the transliteration adopted by the ISO.

Examples: *Izv. glav. astr. Obs. Pulkove* = *Izvestija glavnoj astronomičeskoj Observatorii v Pulkove*.

*Mitt. Univ. Sternw. Wien* = *Mitteilungen der Universitäts-Sternwarte Wien*.

*Contr. Oss. astr. Milano, Merate* = *Contributi dell' Osservatorio astronomico di Milano, Merate*.

(iii) *The order of the references* should be the following:

( $\alpha$ ) for a *periodical*: surname and initials of the author, or authors, date, possibly the title of the article quoted (in its original language or in that of the author of the bibliography), abbreviation of the periodical, volume, page. The title of the article should be put in parentheses if it is not the exact title but rather a translation or an abridged or annotated title.

Example:

Smith, A. 1964, 21-cm absorption profiles for an expanding gas cloud, *Mon. Not. R. astr. Soc.*, **127**, 347.

Yakovkin, A. A. 1962, (An unsolved astrometrical problem), *Astr. Zu.*, **39**, 736.

( $\beta$ ) for a *book*: surname and initials of the author, or authors, date, title (in the original language and possibly translated into the language of the author of the bibliography; in the latter case, the translated title should be put in parentheses), editor, publisher, place of publication, and possibly chapter and page. This reference should be typed as follows, noting carefully the punctuation to be used:

Chandrasekhar, S. 1961, *Hydrodynamic and Hydromagnetic Stability*, Clarendon Press, Oxford.

In the case where the quoted work is part of a collection, this can be indicated after the title.

Thomas, R. N., Athay, R. G. 1961, *The Solar Chromosphere*, Vol. VI in the series: Interscience Monographs and Texts in Physics and Astronomy, Interscience Publ., New York.

( $\gamma$ ) for an *article in a book*: surname of the author, or authors, of the article, initials, date, title of the article (language of the author of the bibliography), in, title of the book (in the original language), name of the scientific editor of the book, initials, publisher, city where published, and, possibly, chapter and page.

Becker, W. 1963, Applications of multicolor photometry, in *Basic Astronomical Data*, Ed. K. Aa. Strand, Univ. of Chicago Press, Chicago, p. 241.

The use of original languages is indispensable for finding a book in a library. In a case where a work is published in translation, and where the reference is made to the translation, this should be noted.

Spitzer, L. 1959, *Physique des gaz complètement ionisés*, Dunod, Paris, translated from the English by J.-E. Blamont (*Physics of fully ionized gases*, Interscience Publ., New York, 1956).

(δ) *for an article in preparation or in course of publication*: put the maximum number of indications possible, and add: “in preparation”, or “in press”.

Wilson, W. W.      in preparation  
or Wilson, W. W.      *Astrophys. J.*, in press.

(ε) *for an article appearing in two different publications*: one of these publications (the one which the author of the bibliography referred to) will normally be used; the second could possibly be added at the end of the reference, in parentheses, preceded by the indication *also in*.

Example:

House, L. L.      1964, *Ann. Astrophys.*, **27**, 763 (also in 1965, *IAU Symposium* no. 23, *Observations astronomiques faites à bord de véhicules spatiaux*, p. 33, CNRS, Paris).

(f) *Notations and formulae*

(see also Section C, p. 116)

(i) The international rules should be generally applied for the *abbreviation of units, for numerical and mathematical formulae, and for notations* which are strictly astronomical. The principal rules where difficulties may arise are noted below, p. 116.

✓ The following point must be strongly insisted upon: **it is important that the international conventions be respected; it is the best way of being generally and widely understood.**

Useful references:

(α) Document U.I.P. 9 (S.U.N. 61-44) (1961)

*Symbols, Units, and Nomenclature in Physics*

Union Internationale de Physique Pure et Appliquée (IUPAP), Commission S.U.N., Professor J. de Boer, Instituut voor Theoretische Fysica, Roetersstraat 1 A, Amsterdam (C), The Netherlands.

(β) Reports of Commissions 3 and 5 of the IAU:

*Transactions IAU*, **1**, 1922, 20-23, 158-207; **2**, 1925, 14, 177; **3**, 1928, 17, 223; **4**, 1932, 19, 221; **5**, 1935, 18, 281; **6**, 1938, 19, 345; **7**, 1950, 13; **8**, 1952, 70; **9**, 1955, 77-79; **10**, 1958, 83-84, plate pp. 262-3 (Martian nomenclature); **11B**, 1961, 163.

The underlined references are particularly important.

Especially dangerous are notations for units such as “cc” (instead of cm<sup>3</sup>), the use of non-metrical units (inches, pounds, etc., which must be written out), the units “km/sec/sec” which should be written km s<sup>-1</sup> s<sup>-1</sup> (because of the ambiguity of fraction lines).

(ii) *Formulae and miscellaneous symbols*. These should be written clearly, if necessary in the margin in black pencil (for example: Greek letters and rarely-used symbols). It should not be forgotten that “kappa”, for example, is often noted differently in France (κ) and in U.S.A. (K), that the figure “seven” is written differently in English (7) and in French (7), etc. It is necessary above all to avoid ambiguity and to be precise in noting what is in index and what is in exponent; as indicated below.

Except in particular cases specified by the author, the scientific editor should be responsible for specifying what should be put in italics, in bold face and in roman (see below pages 108 and 122).

Thus, formulae should be presented by the author as follows (all indications not to be printed should be marked in black pencil):

$$\begin{aligned}
 \text{gr. mu} \mu \frac{dI}{d\tau} &= I - \frac{1}{2} \int_{-1}^{+1} I d\mu \quad \text{gr. tau} \\
 I(\mu) &= b \left[ \sum_{\alpha=1}^{n-1} \frac{L_{\alpha}}{1 + \mu \Lambda k_{\alpha}} e^{-k_{\alpha} \tau} + \sum_{\alpha=1}^{n-1} \frac{L_{\alpha}}{1 - \mu \Lambda k_{\alpha}} e^{k_{\alpha} \tau} + \tau + \mu \Lambda + Q \right] \\
 &\quad \text{gr. mu} \quad \text{gr. sigma cap} \quad \text{gr. alpha} \quad \text{gr. sigma cap} \quad \text{gr. alpha} \quad \text{gr. tau} \quad \text{gr. mu}
 \end{aligned}$$

In complicated formulae, use

$$\begin{aligned}
 (x/y) &\quad \text{which is preferable to} \quad \frac{x}{y} \\
 \exp(-k_{\alpha} \tau) &\quad \text{which is preferable to} \quad e^{-\frac{k_{\alpha} \tau}{\alpha}}
 \end{aligned}$$

In order to simplify printing process; it is recommended to use

$$\begin{aligned}
 N_{12}^2 &\quad \text{instead of} \quad N_{12}^2 \\
 \sqrt{\left( \frac{\sin(\alpha+\beta)}{a^2+b^2+c^2} \right)} &\quad \text{instead of} \quad \sqrt{\frac{\sin(\alpha+\beta)}{a^2+b^2+c^2}} \\
 x^{\frac{1}{n}} \quad \text{or} \quad x^{1/n} &\quad \text{instead of} \quad \sqrt[n]{x}
 \end{aligned}$$

### 3. RULES FOR SCIENTIFIC EDITORS

#### (a) General comments

It is important above all that the scientific editors, who have the heavy task of gathering together the various manuscripts and making of them a coherent whole, should verify that authors have followed the rules set out above in the preparation of their manuscripts.

Their second task is to prepare the connecting texts, to introduce titles and sub-titles in the places where they are required, to put the discussions in order and to prepare them for printing, to number the contributions and, certainly, the pages of the completed manuscript. They should indicate clearly for each figure its position in the text and should place on the back of each figure its number and the identification of the article to which it corresponds.

In matters of detail, the scientific editors should see that all ambiguity is avoided, both for the benefit of the IAU secretariat and for the printer, *whom one must assume is not competent scientifically to deal with the matter*. This is why scientific editors should specify to the sub-editor, in certain cases, the typography required.

It is for this reason that the principal rules of typography adopted by the IAU are mentioned here; it is better to request the co-operation of scientific editors, rather than of authors, in adhering to these rules, although **the IAU secretariat will, except in ambiguous cases, deal with such matters.**

#### (b) Principal typographical usages

*Algebraic symbols.* All symbols are in italics; the operators are in roman: Example:  $x, y, t, z$ , etc.  $A, B, C, D$  (day numbers) but  $\cos t, \exp(a + bt), \operatorname{tg} z, dx/dt$ , etc.

Vectors are in bold-face type: **B**, **H**  $\cos \omega t$ , etc. The scientific editor should not underline the letters which should be put in italics, except in cases which might be ambiguous; he should always do this, where necessary, in black pencil; the IAU Secretariat will finish this work, by noting in red ink all typographical specifications.

Thus, it is unnecessary to underline  $x$ ,  $a$  and  $y$  in  $\cos(ax + y)$ ; on the other hand, if the letter "a" is used in the same text with several different meanings, it would be suitable to specify this by printing the letter sometimes in italics, sometimes in bold face or in roman. Thus it is necessary to indicate this in black pencil in the manuscript.

It is necessary to specify when 1 means 1 (one) and when this symbol means l (the letter L).

Other common confusions concern (a) hyphens, dashes and minus signs (for example:  $B - V$  and 2000-3000Å; minus signs as in  $B - V$  should be noted  $B \perp V$  in pencil); (b) the letter O and the figure zero: spectral types  $A_0 V$  (zero) and  $O_5 I$  (letter O).

#### *Chemical and spectrographic symbols*

Chemical elements: roman capitals: Cu; H; O; N, etc.

Ions: the degree of ionization in small capitals: Ca II; Fe XIV, etc.

Spectral lines: in general roman capitals: H,  $H_\alpha$ ,  $H_\beta$  and K, etc.

(Exception—Lyman alpha:  $L_\alpha$  (italic)). The symbols  $\alpha$ ,  $\beta$  are not in index.

Energy levels: in italics:  $s$ ,  $p$ ,  $S$ , etc.

Atomic weight: two possible notations: use Hg 198 in preference to  $Hg^{198}$ .

Wavelengths: to be indicated in a homogeneous fashion within an article, either by  $\lambda_{5303}$  or by 5303 Å.

The colours  $U$ ,  $B$ ,  $V$ , etc., should be in italics; but UV (for ultra-violet) and IR for (infra-red) are in roman; X-rays are in roman as, for example, XUV. The criterion of difference is that the quantities  $U$ ,  $B$ ,  $V$ , etc. represent numbers or measured quantities, while XUV, IR are abbreviations for words or expressions.

#### *Astronomy*

Spectral classifications: in roman: B<sub>5</sub>, cG<sub>2</sub>, Me<sub>5</sub>, etc.

Abbreviations such as: pe (photo-electric), pg (photographic): in roman.

Magnitudes: the abbreviation "mag" or "magn" is not to be used, rather the word "magnitude" written out in full.

To note:  $m = 12.3$ , in italics

$B = 0^m 12$ , also in italics

$m_{pg} < 3$ ;  $m_{pe} = 2.7$ , etc.

#### (c) *General organization of articles*

It is important to respect the hierarchy in the numbering of paragraphs; the typography of titles is specified by the IAU secretariat.

Numbering is as follows: I, A, 1, a, i,  $\alpha$ . It is important to use this sequence in order to avoid errors of subordination from one paragraph to another. The use of the symbols I and A should be reserved, in principle, for parts, sections, chapters of a volume and, thus, only editors should use them. The symbols 1, a, i and  $\alpha$  should generally be used within individual articles.

#### 4. RULES FOR SUB-EDITING

The secretariat of the IAU applies a certain number of rules and sub-edits the manuscripts in red ink. As this work requires a certain degree of practice, **it is preferable, in order to avoid errors, for scientific editors not to make typographic markings.**

The following conventions are given merely as an indication and are not complete. It is hoped that they will help authors to understand better the kind of problems that the sub-editing of their manuscripts presents.

### *Choice of type*

Page running heads (supplied by sub-editor)	No. B 101-9, capitals, 2-unit spacing, centred
Section headings (titles of Commissions, Symposium articles, etc.)	No. A 101-10, capitals, 2-unit spacing, centred
(Titles of sub-committees, etc.)	No. B 101-9, capitals, 2-unit spacing, centred. Figures would be of the type F 340, in line with the letters.
Sub-titles	No. 1, small capitals 10/11 points, 2-unit spacing, centred. Spacing—one line above, a half line below.
	No. 2, lower-case italics 10/11 points, centred. Spacing—one line above, a half line below.
	No. 3, lower-case italics 10/11 points, to the left of page with 1 em indentation, broken line, a half line above, 3 points below.
	No. 4, lower-case italics 10/11 points, to the left, at the beginning of the line of text indentation of 1 em.
	No. 5, bold-face; as No. 2 but, instead of italics, bold-face type 410.
Titles of tables	Lower-case, bold-face type 9/10 points, and capitals; centred, non-lining figures.

### *Spacing*

Indications should be given to specify the spacing between the different characters.

H $\alpha$	2 units
$\alpha$ Vir	5
HD 370931	2
NGC 393	2
$\lambda$ 3163	2
Ca II	5
K 5	5
10.5 km s <sup>-1</sup>	5 units between numbers and units
$U - B$	5 units on either side of the minus sign.

Of course, in certain cases, decisions should be taken by the IAU secretariat, although in most cases a preliminary systematic agreement between the IAU and the printer is possible.

### *Symbols and formulae*

It must be clearly specified when the sign  $-$  is a minus sign and when it is a hyphen, a short or a long dash; when an  $\circ$  is a zero and when it is the letter O, when  $\perp$  is the letter "L" and when it is the figure one.

Particularly useful symbols:

Astronomical signs:  $\text{☾}$  last quarter;  $\text{☽}$  first quarter;  $\text{☾}$  Full Moon;  $\text{●}$  New Moon;  $\text{♁}$  Earth;  $\text{☼}$  Sun;  $\text{♂}$  Mars;  $\text{♁}$  ascending node;  $\text{♁}$  descending node.

Plus, of course, the usual mathematical symbols.

In general, the checking of the coherence of the editing (especially as regards formulae) should be done at the sub-editing stage.

*Principal indications for sub-editing* (in addition to those above).

The table for proof correction (pp. 122–127) should be followed; the notations to be used for editing typed material are the same as those used for correcting printed material.

In particular, indications for additions and deletions (1–5) and for the choice of type (6–11) are very often used, usually without marginal indications. The same is true also for spacing indications, for letter positioning (15–24, 32, 33) and for underlining (39).

Some notations are frequently replaced in sub-editing by the following:

		<i>Examples</i>
Added words or letters	∧ where needed, the material to add above line	The <sup>same</sup> <del>is</del> <sup>u</sup> <del>type</del>
Exponents	√ under the character to put in exponent	a <sup>3</sup> √
Indices	∧ above the character to put in index	a <sup>3</sup> ∧
Spacing	/ where needed, the sign above line	one <sup>#</sup> / <del>shall</del> <sup>#</sup> / <del>use</del>

## B. SPELLING AND TRANSLITERATION

### I. GENERAL CONSIDERATIONS REGARDING SPELLING AND LANGUAGE

In *Transactions of the IAU*, the scientific and administrative reports are in English or in French. However, certain speeches (official opening ceremonies, in particular) can be in other languages (Russian, German, etc.). In the Symposium volumes the same rule is generally followed.

French being an official language of the IAU, it is usual to write titles of Commissions, abbreviated titles which appear at the top of each page, the text of Resolutions, etc., in French. As often as possible, important texts will be given in both English and French. In Symposium volumes the choice between English and French for titles, official texts, etc., will be made by the Organizing Committee for the Symposium. The texts of the reports themselves (with the possible exception of summaries) should be written in French or English, according to the wish of the author.

There is, of course, a noticeable difference, in some cases, between English and American spelling. The American spelling will be used in reports or communications by authors from U.S.A. In all other cases, unless the author explicitly indicates otherwise, the English spelling will be used. Quotations, in American reports, of non-American authors, will be written with the English spelling, or vice-versa, in such a way that authors and titles are always quoted in their original form.

In some cases, it has appeared necessary to establish certain definite usages. Thus, for words ending in *-ize* or *-ise*, *-ize* will be used; *disk* will be used rather than *disc*, *organization* rather than *organisation*.

## 2. ACCENTS AND DIACRITICAL MARKS

In French, a careful use of accents is recommended. The authors of French texts should be particularly precise and accurate in this respect, considering that the printer is English. It should be noted that accents are not put on large capitals. On small capitals, usage varies; in IAU publications accents will be used.

As far as possible, diacritical marks in Czech, Turk, Spanish, etc., proper names will be included.

✓ **It is indispensable to submit manuscripts properly accented**, even on capital letters (the typography being subject to modification by the editor).

## 3. USE OF CAPITALS

Initial capitals are common in English and are the rule for all German substantives; they are, on the other hand, very rare in French.

The rules below will be applied in both English and French texts. The following words should begin with a capital and used as a name or title: *President, Vice-President, Commission, Committee, Members* (of the Union) (but *members* of Commissions), *Resolution* (when specifically designated: "Resolution No. 17", but "the *resolutions* voted by the General Assembly"), *Appendix*.

The names of individual objects (*Sun, Moon, Galaxy*) are to begin with a capital. On the other hand, one should speak of *minor planets*, of *spiral galaxies*, without capitals. *The Galaxy* should not be confused with *a galaxy*! . . .

The names of special objects of major interest should begin with a capital: *Sputnik I, Mariner III*; one may speak also of the series of *Rangers*. But it should be noted that the words *sputnik* or *satellite* are, in general, common words.

The word *coudé* to designate such a telescope should not be written "Coudé"; its name originates from a French adjective, and not from an inventor by the name of Coudé!

Naturally, the physical effects named after scientists are written with capitals: *Rayleigh, Doppler*, etc. The units named after scientists are not, however, capitalized: *ampere, joule, watt, angström*, etc.

## 4. HYPHENATION

One of the greatest difficulties in bilingual spelling in IAU publications arises from the use of hyphens in fabricated words. In French, the prefixes *super, hypo, ultra, infra*, etc., of Latin or Greek origin, are not followed by hyphens—thus in French: *supernova, extragalactique, supergéantes, ultraviolet, infrarouge, radioélectrique, coopération, cooption*.

On the other hand, in English these words usually appear as: *super-nova, extra-galactic, super-giants, ultra-violet, infra-red, co-operation, co-option*.

French sometimes uses hyphens when the prefix is taken from common French (for example: *sous-naines, porte-plaque, but surestimer, surpression*, etc.) and when the hyphen joins two substantives, or two long words of comparable importance: *univers-îles, magnéto-hydrodynamique, ultra-centrifugeuse, est-ouest, sud-est*, etc., or when it is necessary to superimpose two prefixes.

A number of English words which appear with hyphens are expressed in French by a complete phrase: *Six-colour photometry = photométrie en six couleurs; punched-card machines = machines à cartes perforées; late-type stars = étoiles de type avancé; black-body radiation = rayonnement de corps noir; weak-line spectra = spectre de raies faibles; two-day symposium = symposium de deux jours; main-sequence stars = étoiles de la série principale; metallic-line stars = étoiles à raies*

*métalliques*; *long-period variables* = *variables à longue période*; *light-curve* = *courbe de lumière*; *non-coherent* = *non cohérent*.

Hyphens are used in French as in English to turn a complex phrase into a substantive or adjective, for example, *prisme-objectif*; *night-time*; *centre-to-limb*; *centre-bord*, etc.

Generally, if a word has a hyphen in French, it has one in its English equivalent; the opposite is not true. It should be noted that an increasing number of English words are losing their hyphens, especially in American spelling; this seems to be the case (although many authors continue to use hyphens) for: *spectrophotometry*, *photovisual*, *photoelectric*, *redshift*, etc. The hyphen in English often corresponds to a problem in pronunciation (e.g. co-operation is not pronounced like Cooper).

#### 5. USE OF LATIN WORDS AND PHRASES

In English, as in French, words of Latin origin are incorporated into the language: *maximum*, *extremum*, *symposium*, etc. In English the plural of these words is often the Latin plural: organization of *symposia*; the two *maxima* of the light-curve, etc. Always in French, and sometimes in English, the plural is: *symposiums*, *maximums*, *extremums*, etc.

Latin phrases, written in full or abbreviated, are often used both in French and in English; they are usually printed in italics (or in roman in a text printed in italics). Examples: *in vitro*, *verbatim*, *et al.* (abbreviation of *et alii*), *a priori*, *a posteriori*, *ibidem*, *sine die*, etc. Note, however, that i.e., *ibid.*, etc. are printed in the text face.

#### 6. USE AND EXPRESSION OF NUMBERS IN DISCOURSE

Texts published by the IAU are almost exclusively of a scientific nature; therefore numbers used are often elaborate and should be written in figures. For example: “*At a wave-length of 5303 Å, one observes . . .*”. An exception is made for numbers expressed in a single word, provided that the unit is also expressed without abbreviation: *three dimensions*, *three cubic centimeters*, (but *3 cm<sup>3</sup>*); *cent chevaux* (but *100 CV*); *millions of stars* (but *some 10<sup>6</sup> cm*); *six per cent* (but *6%*), etc.

The Commissions of the IAU are designated by arabic numerals (Commission 36), the General Assemblies of the Union by roman numerals, or written in full: *Xth General Assembly* or *Tenth General Assembly*.

Ordinals are abbreviated as follows:

✓ In French: 1<sup>er</sup> rather than 1er; 2<sup>ème</sup> rather than 2ème, etc.

✓ In English: 1st, 2nd, 3rd, 10th, 100th, etc., never 1<sup>st</sup>, 2<sup>nd</sup>, 100<sup>th</sup>, etc.

Cardinals are often preceded by the abbreviation for *number* or *numéro*. In English *no.* is widely used; in French *n<sup>o</sup>* is preferable.

Dates should be written 1962–65 (or 1957–63) for the period extending from 1962 (or 1957) to 1965 (or 1963) inclusive, but 1962, 1965 if only these two years are concerned and not the years 1963 and 1964 as well.

#### 7. RULES OF TRANSLITERATION

In the matter of transliteration the IAU should, as far as possible, adapt its practices to international rules.

The rules adopted by various existing publications for the transliteration of Cyrillic characters and, generally speaking, by the Presidents of the various IAU Commissions, differ considerably from one case to the other. Usually these rules attempt to maintain a near-accurate

pronunciation of the Russian word in the language of the user. It is evident that such an attempt can only lead to inconsistency, since the transliterations into English, French or German necessarily lead to different ways of writing the same words.

This is why the IAU recommends the use of the transliterations adopted by UNESCO organisms (document ISO/R9-1954) and will make an effort, itself, to adopt this system (as indicated below, p. 161, in the introduction to the list of IAU Members). This document clearly explains the principles of transliteration:

“It is a question of representing characters or signs, not sounds—and this is what distinguishes transliteration from transcription—a matter of representing characters as they are written, rather than according to their phonetic\* or etymological values.

“Transliteration can, and should, be automatic, so that it can be done by anyone able to identify the language of the original, and it should be possible for anyone with an adequate knowledge of this language to re-establish the text in its original characters.”

The attached table gives the details, as well as the transliteration of characters appearing only in Bulgarian, Ukrainian, White Russian or Serbian. It recalls also, where relevant, the transliterations adopted by the *Astronomischer Jahresbericht* (AJB), by the *Mathematical Review* (MR), by *Physics Abstracts* (PA), and by the *Bulletin Signalétique du CNRS* (CNRS).

The journal *Space Science Reviews*, has adopted the international system. British and American journals, and the *Transactions of the IAU* up to the present time, have, in general, adopted the system of *Physics Abstracts*. Most journals, in particular *Bulletin Signalétique du CNRS*, do not follow rules defined by a printed document.

*Remark:* the diacritical marks which appear in the table below should be used, particularly in all printed documents. In typed texts, ambiguity is avoided by the use of the sign ^ (double diacritical mark) for the signs ˇ, ˘, ˙; the sign ˘ (single diacritical mark) for the sign ˘ or ˘.

\*In the past, the IAU preferred the principle of a phonetic system but did not arrive at a clear definition of such a system (see Resolution No. 8 of Tenth General Assembly, *Transactions IAU*, 10, p.73).

Transliteration of Cyrillic characters

Cyrillic character		ISO/R9-1954	Other transliterations
А	а	A a	
Б	б	B b	
В	в	V v	W w (AJB)
Г	г	G g	
Д	д	} D d	
Ђ	ђ		
Е	е(ě)	E e (Ě ě)	e, je, jo (AJB)
Є	є	Je je	
Ж	ж	Ž ž	sh (AJB) zh (PA, CNRS) j (varia)
З	з	Z z	s (AJB)
И	и	} I i	
І	і		
У	у	Ji ji	
Ј	ј	} J j	
Й	й		
К	к	K k	i (MR, PA)
Л	л	L l	
Љ	љ	Lj lj	
М	м	M m	
Н	н	N n	
Њ	њ	Nj nj	
О	о	O o	
П	п	P p	
Р	р	R r	
С	с	S s	ss, s (AJB)
Т	т	T t	
Ђ	ђ	Ć ć	
У	у	U u	
Ф	ф	F f	
Х	х	H h	Ch (AJB) Kh (PA, CNRS)
Ц	ц	C c	z (AJB) ts (PA)
Ч	ч	Č č	tsch (AJB) ch (PA)
Џ	џ	Dž dž	
Ш	ш	Š š	sch (AJB) sh (PA, CNRS)
Щ	щ	Šč šč	schtsch (AJB) shch (PA, CNRS)
Ъ	ъ	not transliterated	
		not transliterated	
Ы	ы	Y y	ȳ (PA)
Ь	ь	' (apostrophe)	not transliterated, or j (AJB)
Ѣ	ѣ	Ě ě	
Э	э	E è	e, é (AJB), é (PA), è (MR)
Ю	ю	Ju ju	yu (MR, PA)
Я	я	Ja ja	ya (MR, PA)

Notes:

- \* character used in Serbian
- † „ Ukrainian
- ‡ „ Bulgarian, Ukrainian, Serbian, White Russian
- § Transliteration, if it is an Ukrainian word Y y
- || „ Bulgarian word Št št
- \*\* „ Bulgarian word Ā ā

## C. NOTATIONS, FORMULAE, UNITS

**It is sometimes preferable to use the non-abbreviated name of a quantity or unit rather than an obscure or uncertain abbreviation.**

## I. MATHEMATICS

(a) *Formulae*

Accumulations of exponents should be avoided:  $e^{-t}$  is correct, but  $e^{-(t_1)^2}$  is difficult to read without error of interpretation. Instead, it should be written:  $\exp(-t_1^2)$ .

Vectors should be written clearly and should be underlined by a wavy line (to indicate that they should be printed in bold face), or this indication may be given in a marginal note.

The arguments of operations:  $\exp.$ ,  $\sin$ , when they contain several terms, should be placed in brackets.

(b) *Special symbols*

$\approx$	equal to approximately
$\sim$ or $\propto$	tends asymptotically towards
$i$ or $j$	imaginary unit
$\text{Re}(z)$	real part of $z$
$\text{Im}(z)$	imaginary part of $z$
$\times$	multiplied by (avoid $\cdot$ which may be confused with the decimal point) Example: $3.5 \times 10^{-5}$ and not $3.5 \cdot 10^{-5}$ which may be confusing ( $3.5.5$ : is it $3.5 \times 5$ or $3 \times 5.5$ ?)

(c) *Numbers*

The decimal point above the line may be used; the document S.U.N. permits the use of a comma in French texts. This latter recommendation will not be followed for the sake of uniform presentation in IAU publications.

Groups of three figures, before or after the decimal point, are separated by a space and never by a period or a comma.

Correct: 38 932·071 172

To be avoided: 38,932·071,172, or 38.932·071.172, or 38932·071172.

An exception is made for groups of four figures; one has to write 3759 Å and 12 133 Å.

Only small numbers (smaller than 12), when they do not appear in formulae or are not followed by the name of a unit, should be written in full: three observatories, but 3 cm, or 3 kT.

## 2. PHYSICS (UNITS)

(a) Symbols are never followed by a period, neither are they given in the plural: 7 cm and NOT 7 cm. or 7 cms. or 7 cms

(b) *Principal units*

Avoid sec, use s for second

avoid gs, use G for gauss

avoid A, use Å for angström.

(c) *Secondary units*

- avoid c/s Mc/s, use Hz, MHz for hertz, megahertz
- avoid EV, KEV, use eV, keV for electron-volt, kilo-electron-volt
- avoid ua, etc., use U.A. for astronomical unit
- avoid cm/s/s, use cm s<sup>-2</sup>.
- (always avoid km per sec.)

(d) *Units of time*

- year = yr (or a)
- day = d
- hour = h
- minute = min (or m, if there is no ambiguity)
- second = s
- E.T., U.T. = ephemeris time, universal time.

An hour should be written: 4<sup>h</sup> 39<sup>m</sup>, preferable to 4 h 39 min. Date of an astronomical observation: year, month, day (1965 January 15). A non-astronomical date (meetings, birth dates, etc.): day, month, year (15 January 1961). No other order is to be used.

3. ASTRONOMY

(a) *Constellations*

The three-letter abbreviation adopted by the IAU should be used, preceded by the name of the star (Greek letters, numbers, etc.). The list below shows the IAU conventions. For each constellation, it gives the Latin name, nominative and genitive, as well as its abbreviation.

**Constellations**

Andromeda, Andromedae	And	Corona Austrina, Coronae Austrinae	CrA
Antlia, Antliae	Ant	Corona Borealis, Coronae Borealis	CrB
Apus, Apodis	Aps	Corvus, Corvi	Crv
Aquarius, Aquarii	Aqr	Crater, Crateris	Crt
Aquila, Aquilae	Aql	Crux, Crucis	Cru
Ara, Arae	Ara	Cygnus, Cygni	Cyg
Aries, Arietis	Ari	Delphinus, Delphini	Del
Auriga, Aurigae	Aur	Dorado, Doradus	Dor
Bootes, Bootis	Boo	Draco, Draconis	Dra
Caelum, Caeli	Cae	Equuleus, Equulei	Equ
Camelopardalis, Camelopardalis	Cam	Eridanus, Eridani	Eri
Cancer, Cancri	Cnc	Fornax, Fornacis	For
Canes venatici, Canum Venaticorum	CVn	Gemini, Geminorum	Gem
Canis Major, Canis Majoris	CMa	Grus, Gruis	Gru
Canis Minor, Canis Minoris	CMi	Hercules, Herculis	Her
Capricornus, Capricorni	Cap	Horologium, Horologii	Hor
Carina, Carinae	Car	Hydra, Hydrae	Hya
Cassiopeia, Cassiopeiae	Cas	Hydrus, Hydri	Hyi
Centaurus, Centauri	Cen	Indus, Indi	Ind
Cepheus, Cephei	Cep	Lacerta, Lacertae	Lac
Cetus, Ceti	Cet	Leo, Leonis	Leo
Chamaeleon, Chamaelonis	Cha	Leo Minor, Leonis Minoris	LMi
Circinus, Circini	Cir	Lepus, Leporis	Lep
Columba, Columbae	Col	Libra, Librae	Lib
Coma Berenices, Comae Berenices	Com	Lupus, Lupi	Lup

**Constellations (continued)**

Lynx, Lyncis	Lyn	Sagitta, Sagittae	Sge
Lyra, Lyrae	Lyr	Sagittarius, Sagittarii	Sgr
Mensa, Mensae	Men	Scorpius, Scorprii	Sco
Microscopium, Microscopii	Mic	Sculptor, Sculptoris	ScI
Monoceros, Monocerotis	Mon	Scutum, Scuti	Sct
Musca, Muscae	Mus	Serpens, Serpentis	Ser
Norma, Normae	Nor	Sextans, Sextantis	Sex
Octans, Octantis	Oct	Taurus, Tauri	Tau
Ophiuchus, Ophiuchi	Oph	Telescopium, Telescopii	Tel
Orion, Orionis	Ori	Triangulum, Trianguli	Tri
Pavo, Pavonis	Pav	Triangulum Australe, Trianguli	
Pegasus, Pegasi	Peg		Australis TrA
Perseus, Persei	Per	Tucana, Tucanae	Tuc
Phoenix, Phoenicis	Phe	Ursa Major, Ursae Majoris	UMa
Pictor, Pictoris	Pic	Ursa Minor, Ursae Minoris	UMi
Pisces, Piscium	Psc	Vela, Velorum	Vel
Piscis Austrinus, Piscis Austrini	PsA	Virgo, Virginis	Vir
Puppis, Puppis	Pup	Volans, Volantis	Vol
Pyxis, Pyxidis	Pyx	Vulpecula, Vulpeculae	Vul
Reticulum, Reticuli	Ret		

*(b) Martian nomenclature*

See *Transactions IAU*, **10**, p. 83–84.

**4. MISCELLANEOUS ABBREVIATIONS**

(a) There is no separation between letters in such cases as UNESCO, IAU, ESO, ESRO, FK<sub>3</sub>, PZT, IGY, BD, etc.; an index of the principal abbreviations used is found on page 119. The names of countries are written with separating periods: U.S.A., U.K., U.S.S.R.

(b) Proper names of persons and countries: titles are omitted in scientific reports, but may be included in formal and administrative reports. Usual abbreviations are:

Prof., Dr, Mr, Messrs, Mrs, Miss (without a period in English); (except in lists of addresses, Professor will not be abbreviated); M., MM., Mme, Mlle (in French). Initials are given in the bibliographies. In the text (and except in cases of possible confusion, such as authors bearing a very common name) they are omitted if an author is quoted but retained when the reference is related to a definite action. Example: "In his presidential address, R. W. Jones referred to . . ."; "the function of partition has been computed by Matsushima and by J. J. Smith. . ."

The spelling of proper names should follow that of the official list of IAU Members; in the case of names written in Cyrillic characters, transliteration should follow, in principle, the rules given on page 113.

In the text, names of cities and countries should be expressed in the language of the author (London or Londres, Lyons or Lyon, etc.); in mailing addresses the local spelling of the city should be used (London, Lyon, etc.).

Likewise, in most cases, the names of countries should follow the local use. For East Germany, DDR should be used; for West Germany, DBR.

## 5. LIST OF COMMON ABBREVIATIONS

The list below gives a table of the principal abbreviations found in publications of the IAU and of the ICSU. Obviously such a list cannot be comprehensive; it does not include abbreviations used in restricted fields by specialists only.

AGK	Astronomischer Gesellschaft Katalog
APFS	Apparent Places of Fundamental Stars
BD	Bonner Durchmusterung
CCIR	Comité Consultatif International des Radiocommunications
CETEX	Committee on Contamination by Extraterrestrial Exploration
CIG	Comité International de Géophysique
CNRS	Centre National de la Recherche Scientifique
COSPAR	Committee on Space Research
CPD	Cape Photometric Durchmusterung
CSAGI	Comité Spécial de l'Année Géophysique Internationale
ESO	European Southern Observatory
ESRO	European Space Research Organization
FAGS	Federation of Astronomical and Geophysical Services
FK	Fundamental Katalog
GC	General Catalogue
GCVS	General Catalogue of Variable Stars
HD	Henry Draper Catalogue
HR	Hertzsprung-Russell
IAB	ICSU Abstracting Board
IAG	International Association of Geodesy
IAGA	International Association of Geomagnetism and Aeronomy
IAU	International Astronomical Union
ICSU	International Council of Scientific Unions
IPMS	International Polar Motion Service
IQSY	International Quiet Sun Years
IR	Infra-red, Infrarouge
ISO	International Standardization Organization
ITA	<i>Institute of Theoretical Astronomy (Leningrad)</i>
ITU	International Telecommunication Union
IUCAF	Inter-Union Committee on Frequency Allocations for Radioastronomy and Space Science
IUCI	Inter-Union Committee on the Ionosphere
IUCSTR	Inter-Union Commission on Solar and Terrestrial Relationships
IUGG	International Union of Geodesy and Geophysics
IUHPS	International Union of the History and Philosophy of Science
IUPAP	International Union of Pure and Applied Physics
IUTAM	International Union of Theoretical and Applied Mechanics
IUWDS	International Ursigram and World Days Service
NASA	National Aeronautics and Space Administration
NRL	National Research Laboratory
PZT	Photographic Zenith Tube
RAS	Royal Astronomical Society
UNESCO	United Nations Educational, Scientific and Cultural Organization
URSI	Union Radio-Scientifique Internationale
UV	Ultra-violet
WDC	World Data Center
WMO	World Meteorological Organization
XUV	X-rays and extreme ultra-violet region

## D. ABBREVIATIONS OF TITLES OF SCIENTIFIC PERIODICALS (in IAU Publications)

### I. GENERALITIES

(a) There does not exist at the present time a *complete, official and international* list of abbreviations of titles of periodicals. The *World List of Scientific Periodicals* (4th edition, London, Butterworths, 1963–5), used in all libraries, gives abbreviations perfectly justified by the number of periodicals listed, but appears sometimes too complex to be used in its entirety in the field of astronomical literature (ex: the IAU will maintain the single abbreviation “Ann.” for *Annales, Annals, Annaler, Annalen*, whereas the World List provides for different abbreviations depending on the language).

(b) General rules. The only *official and international* document which can be referred to is “La Recommandation ISO R/4, mars 1954” entitled *Code international pour l’abréviation des titres de périodiques*. The following essential points should be kept in mind:

1. As a general rule, titles are abbreviated in such a way as to make it possible to identify both the title and the language (therefore titles of periodicals in Russian should not be translated but transliterated).
2. The order of words as they appear in the title should always be followed in the abbreviation of the title.
3. As a general rule, all substantives should begin with a capital letter, all adjectives with a lower-case letter. (There can be some exceptions: ex.
  - (a) when the adjective is the first word in the title;
  - (b) “R.” for the English adjective Royal;
  - (c) for the English adjectives of nationality, etc.)
4. *Articles, conjunctions, prepositions* are, in principle, omitted, unless they are necessary for the identification of the periodical. In this case they are not abbreviated.
5. Titles consisting of a single non-compound word are not abbreviated (exception is made for the article), ex: “Observatory”.
6. If there is some doubt as to the origin of the periodical, the place of publication is mentioned after the title, ex:

Ann. Phys., Leipzig (Annalen der Physik)  
Ann. Phys., Paris (Annales de Physique)  
Ann. Phys., New York (Annals of Physics).

(c) Transliteration. The titles of Russian periodicals in Cyrillic characters should be transliterated according to the recommendations given on page 113. The allowances provided for the letters X, II, III, III, are valid in the abbreviations of these titles and have been mentioned in the list of periodicals.

### 2. PRINCIPAL ABBREVIATIONS

N.B. In conformity with what has been said in paragraph (a), the abbreviations not consistent with the *World List* are indicated by an asterisk.

- *Abstr.* : Abstract
- *Accad.* : Accademia
- *Acad.* : Academy, Academie, Academia
- *An.* : Anales
- \* – *Ann.* : Annalen, Annaler, Annales, Annali, Annals (WL: *Annln, Annlr, Annls, Annali, Ann.*)
- *A.* : Anual, Annual, Annuel

- *Anu.* : Anuario
- *Annu.* : Annuaire
- *Astronaut.* : Astronautics, etc.
- *Astr.* : Astronomia, Astronomie, Astronomy, etc.
- *Astrofis., Astrofiz., Astrophys.* : Astrofísica, Astrofizika, Astrophysics, etc.
- *Ber.* : Bericht
- *Bol.* : Boletim, Boletín
- *Boll.* : Bollettino
- *Bull.* : Bulletin
- \* - *C.r.* : Comptes-rendu (WL: *Cr.*)
- *Commun.* : Communications
- \* - *Contr.* : Contributions, contributi, etc. (WL: *Contr., Contriti*)
- *Geofis., Geofiz., Geofys., Geophys.* : Geofísica, Geofizika, Geofysik, Geophysics, etc.
- *Inst.* : Institut, Institute, Institution
- *Instn* : Institution
- *int.* : international, etc.
- *Ist.* : Istituto
- *J.* : Journal
- *Jb.* : Jahrbuch
- *Jber.* : Jahresbericht
- \* - *Mem.* : Memoirs, Mémoires, Memorias, Memorie, etc. (WL: *Mem., Méms; Memorie*)
- *mon.* : monthly
- *Nachr.* : Nachrichten
- \* - *nat.* : national (WL: *natn.*)
- *naut.* : nautical
- *Obs.* : Observatoire, Observatory
- *Obsc., Obsns.* : Observações, Observations (or \* : *Observ.*, but not in conformity with the WL)
- *Ossni.* (WL) (or \* : *Osserv.*, not in conformity with the WL) : Osservazioni
- *Oss.* : Osservatorio
- \* - *P.V.* (WL : *P.v.*) : Procès-verbaux
- *Proc.* : Proceedings
- *Pubbl.* : Pubblicazioni
- \* - *Publ.* (WL: *Publner, Publtnes, Publs, Publ*) : Publicaciones, Publications, Publications, Publikationer
- *Q.* : Quarterly
- *R.,r.* : Royal, royal
- *Rc.* : Rendiconti
- *Rep.* : Report
- *Repr.* : Reprint
- *Res.* : Research
- *Result.* : Resultados, Resultats
- \* - *Rev.* (WL : *Rev., Revue, Revta*) : Review, Revue, Revista
- *Schr.* : Schriften
- *Sci.* : Science, Scienza, Scienze, etc.
- *scient.* : scientific, etc.
- *Ser.* : Serie, Series, Serija, etc.
- *Soc.* : Societa, Société, Society, etc.
- *Supl.* : Suplemento
- *Suppl.* : Supplément, Supplement, Suplemento, etc.
- *Trans.* : Transactions
- *Transl.* : Translation
- *Un.* : Union, etc.
- *Univ.* : Universidad, Université, University, etc.
- *Z.* : Zeitschrift
- *Ztg.* : Zeitung
- \* - *Zu.* : Zurnal (WL: *Zh.*)

3. LIST OF PERIODICALS MOST COMMONLY USED IN  
ASTRONOMICAL LITERATURE, WITH THEIR ABBREVIATIONS

*General remarks*

1. We have tried to establish as complete a list as possible, without pretending to arrive at an exhaustive list. The periodicals not included in the present list may be found in the *World List of Scientific Periodicals*, 4th edition (1963–65).
2. The term “periodicals” has been used in its broadest sense as a “publication appearing in a series over an undetermined period of time”, even if the periodicity is not regular.
3. Each time it has appeared to be useful, *changes of titles* or references to exact titles have been mentioned, ex:

Meddelanden från Stockholms Observatorium,  
see: STOCKHOLMS OBSERVATORIUMS MEDDELANDEN.

4. Astronomers use very condensed abbreviations for certain periodicals. These are noted in parentheses after the abbreviated title, but their use is not recommended in all printed documents.

For list of periodicals, see French version, page 76.

## E. HOW TO CORRECT PROOFS

As a general rule only the first proofs (galleys) will, hereafter, be sent to authors. It is therefore important to correct them accurately, legibly and completely. The list below gives the principal symbols used in Great Britain (since the IAU printer is located in that country, it is normal that these symbols, for which there is no international standard, should be used) according to “British Standard 1219”.

*Important comments*

All corrections should be clear and should be indicated in the margin in ink; the markings within the text indicate the places where the corrections should be made.

If several corrections occur in the same line, they should be divided between the two margins, the order being from left to right.

Normally, only the letters and words to be inserted or added to the existing text should be written on proof, in addition to the symbols or abbreviations in the table below. If, however, comments or instructions are given on these proofs, they should be encircled and preceded by the word: “PRINTER”, in underlined capitals. If these comments are written by the editor, but intended for the author, the same indication should be used, the word “AUTHOR” preceding the comments.

*Use of the table*

The three columns indicate: the instruction, the mark to appear in the text, and the mark to appear in the margin. They indicate in “script” what the author should write; the indications in “print” refer to the way in which the author should follow the instructions and place the symbols, and are not part of the marks to appear.

**TABLE**  
**Addition or deletion of characters**

No.	Instruction	Textual mark	Marginal mark
1	<u>Insert</u> in text the matter indicated in margin	∧	New matter followed by /
1 bis	<p><u>Various insertions</u> (special marks)</p> <ul style="list-style-type: none"> <li>- comma, semi-colon</li> <li>- full stop, colon</li> <li>- interrogation, exclamation mark</li> <li>- parentheses or brackets</li> <li>- hyphen</li> <li>- rules of various lengths</li>   <li>- apostrophe</li> <li>- single or double quotation marks</li> <li>- ellipsis</li> <li>- fraction lines</li> </ul>	<p>∧ where necessary</p> <p>∧ where necessary</p> <p>∧ where necessary</p> <p>∧ where necessary</p> <p>∧ where necessary</p> <p>∧ where necessary</p> <p>∧ where necessary</p> <p>∧ where necessary</p>	<p>;/      ;/</p> <p>⊙      ⊙</p> <p>!/      ?/</p> <p>(/      )/</p> <p>1-1</p> <p><u>em</u>   <u>em</u>   <u>2em</u></p> <p>(1 em represents approximately 4 mm)</p> <p>‘      ’</p> <p>“ ”      “ ”</p> <p>…/</p> <p>⊙</p>
2	<u>Delete</u>	Strike through characters to be deleted	<del>/</del>
3	<u>Delete and close up</u>	Strike through characters to be deleted and use mark 17 below	<del>/</del>
4	<u>Leave</u> as printed (ignoring any correction made in error)	..... under characters to remain	stet
5	<u>Substitute</u>	Strike through characters to be substituted	New characters followed by /
5 bis	<u>Various substitutions</u> (special marks)	/ or / / where necessary	As 1 bis

## Type changes

No.	Instruction	Textual mark	Marginal mark
6	Change to <u>italic</u>	— under characters to be altered	<i>ital</i>
7	Change to <u>small capitals</u>	≡ under characters to be altered	<i>S. C.</i>
8	Change to <u>capital letters</u>	≡≡ under characters to be altered	<i>caps</i> (for capitals) or <i>cap</i> (if only one character is to be altered)
9	Use capital letters for <u>initial</u> letters and small capitals for rest of word	≡≡ under initial letters and ≡ under rest of word	<i>c. &amp; s.c.</i>
10	Change to <u>bold type</u>	~ under characters to be altered	<i>bold</i>
11	Change to <u>lower case</u>	Encircle characters to be altered	<i>l. c.</i>
12	Change to <u>roman</u> type	Encircle characters to be altered	<i>rom</i>
13	<u>Wrong fount.</u> Replace by letter of correct fount (corresponding to rest of text)	Encircle character to be altered	<i>w. f.</i>

**Position of characters**

No.	Instruction	Textual mark	Marginal mark
14.	<u>Invert type</u>	Encircle character to be altered	
15	Substitute or insert character(s) under which this mark is placed, in " <u>superior</u> " position	/ through character or	$\lambda$ under character (e.g.  )
16	Substitute or insert character(s) over which this mark is placed, in " <u>inferior</u> " position	/ through character or	$\lambda$ over character (e.g.  )
17	<u>Close up</u> ; delete space between characters	linking characters	
18	<u>Reduce space</u> - between lines  - between words	connecting lines to be closed up  between words	} less #
19	<u>Insert space</u> - between words - between lines or paragraphs	$\lambda$  > between lines to be spaced	} # (amount of space may be indicated)
20	Make space appear <u>equal</u> between words	/ between words	eq #
21	<u>Add space</u> between letters	/// between tops of letters requiring space	letter #
22	<u>Transpose</u>	between characters or words (numbered when necessary)	trs

## General arrangement of text

No.	Instruction	Textual mark	Marginal mark
23	Place in <u>centre</u> of line	Indicate position with 	<i>centre</i>
24	<u>Indent</u> one em two ems	 at the left  at the left	 
25	Move matter to <u>right</u>	 at left side of group to be moved	
26	Move matter to <u>left</u>	 at right side of group to be moved	
27	<u>Move</u> matter to position indicated	 at limits of required position	<i>move</i>
28	Take over character, word or line to <u>next</u> line, column or page	 before the words or lines to be moved	<i>take over</i>
29	Take back character, word or line to <u>previous</u> line, column or page	 after the words or lines to be moved	<i>take back</i>
30	<u>Raise</u> lines	 over lines to be moved  under lines to be moved	<i>raise</i>
31	<u>Lower</u> lines	 over lines to be moved  under lines to be moved	<i>lower</i>
32	<u>Begin</u> a new paragraph	 before first word of new paragraph	<i>n.p.</i>
33	<u>No new paragraph</u> here	 between paragraphs	<i>run on</i>

## Miscellaneous corrections

No.	Instruction	Textual mark	Marginal mark
34	Change <u>damaged character(s)</u>	Encircle character(s) to be altered	×
35	Correct <u>vertical alignment</u>		
36	<u>Straighten lines</u>	══ through lines to be straightened	══
37	Spell out <u>abbreviation</u> or figure in full	Encircle words or figures to be altered	<i>spell out</i>
38	Insert <u>omitted portion</u> of copy	↖	<i>out, see copy</i> (the phrase to be added may be written in the margin and its placement clearly indicated by an arrow)
39	<u>Underline</u> word or words	— under words affected	<i>underline</i>
40	Use <u>ligature</u> (e.g. ffi) or diphthong (e.g. œ)	⊂ enclosing letters to be joined	⊂ enclosing ligature or diphthong required
41	Substitute <u>separate</u> letters for ligature or diphthong	/ through ligature or diphthong to be altered	Write out separate letters followed by /
42	Correction is <u>concluded</u>	None	/ at the end of the paragraph or line