

An Electronic Submission Service for Astronomy and Astrophysics

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Abstract

This paper outlines an Electronic Submission Service (ESS) for Astronomy and Astrophysics, suitable for all parts of the journal: *Letters*, *Main Journal*, and *Supplements*. The proposed service should be run by a professional entity: one of the publishers, ESO, the CDS, or some other, yet to be decided, party.

The ESS is a fully automated service, requiring minimal technical skills from authors, and editorial staff. After its initial development, testing, and implementation, the ESS should run largely unattended, and require minimal maintenance.

The ESS is designed to support the editorial process, by allowing submission of manuscripts and graphical material through *email*, *ftp*, and *Web uploads*. The ESS subsequently processes the (L^AT_EX) manuscript, producing PostScript and PDF versions of the paper. These are made accessible to authors, editors, and referees, by placing them in a password protected area of the Web site, associated with the ESS. On completion of these steps, the ESS automatically informs the editorial office, by email, of the newly arrived submission.

Finding and consulting an appropriate referee require the intervention of the editors, who will do most of their correspondence via email. Once a referee is found, (s)he may access the paper at the ESS Web site, using the password provided by the editor.

The service, as proposed here, is inspired by the electronic submission schemes employed by the American Astronomical Society for *The Astrophysical Journal*, and the Los Alamos National Laboratory for their *E-Print* archive.

1 Introduction

Astronomy and Astrophysics is moving towards electronic submission of papers. Current proposals involve the use of computer facilities available at the institutes where the editors reside. This has several disadvantages:

- there is no uniform submission procedure for the various parts of the journal (*Letters*, *Main Journal*, *Supplement Series*),

- editorial staff have to concern themselves with the technicalities involved with the processing of submitted papers,
- submission procedures change when editors change.

To overcome these problems, in this paper a professional Electronic Submission Service (ESS) is proposed, which should be run by the publishers, ESO, the CDS, or another suitable party. The advantages over the situation where editors have to rely on computer services at their institute are:

- ample facilities, accomodating for
 - large e-mail submissions,
 - ftp,
 - Web uploads;
 - automatic processing of uploads from source files, producing PostScript and PDF¹,
- accessibility through the Web, for authors, editors and referees (username/password protected),
- continuity of service when editors change.

Prior to submitting a manuscript, author(s) should inform the editors of their intent to do so. In return, they should receive an email with instructions.

The submission service should require the L^AT_EX source files, and process these with the most recent macro packages available from the publishers. As a last resort option, authors could be permitted to submit PostScript or PDF files.

Submissions are processed automatically, resulting in an e-mail to the editors, with a URL² through which the processed submission (available as PostScript and PDF files) may be accessed by authors, editors and referees (username/password access).

An outline of the ESS is given in figure 1. The ESS as proposed in this paper, is inspired by the electronic submission schemes employed by the American Astronomical Society for *The Astrophysical Journal*³, and by the Los Alamos National Laboratories for their *E-Print* archive⁴.

2 The Electronic Submission Service

2.1 Design Rationale

The ESS should require minimal technical skills from authors and editorial staff. The fully automatic processing of incoming manuscripts minimizes the skills required from the editorial staff. They are informed of the arrival of a new

¹PDF: the Portable Document Format, used by the publishers to make full text papers available online.

²URL: Uniform Resource Locator: 'address' of a Web page on the Internet.

³<http://www.aas.org/publications/aastex/apjems.html>

⁴<http://xxx.lanl.gov/help/submit>

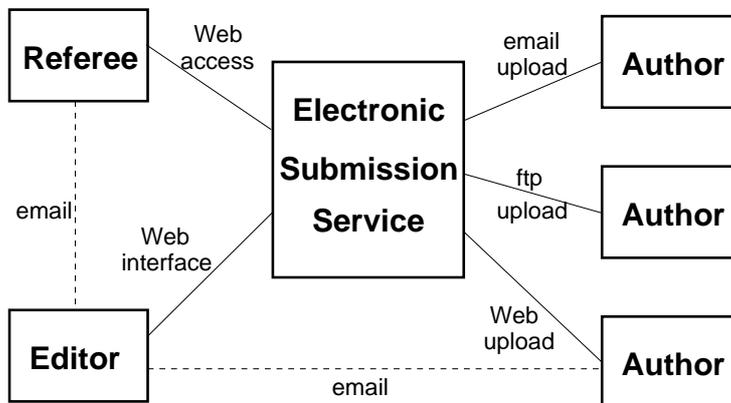


Figure 1: Outline of the Electronic Submission Service. Authors submit their paper via *email*, *ftp*, or *Web uploads*. The ESS processes the submission, and makes it available through the Web, in PostScript and PDF format, in a password protected area. Authors and editors are informed of a successful submission by an automatically generated email message, providing them with an identifier and a password, unique to each manuscript. The editors consult the referees, and the referee that agrees to read a particular paper is provided with its URL, identifier, and password. The referee reports his findings to the editor by email. The editor informs the author(s), and sends the approved version of the manuscript to the publisher (by pressing a button in the editor's ESS *Web interface*). The ESS should distinguish submissions for *Letters*, *Main Journal*, and *Supplement Series*, so they may be handled by the appropriate editor. Since everyone involved (authors, editors, and referees) accesses the ESS by email, ftp, or through the Web, the location of the computer that hosts the ESS is arbitrary: it could be at the publishers', ESO, the CDS, or any other convenient place.

manuscript by an automatically generated email, providing the necessary details, and a URL, identifier, and password, by which the submission may be accessed through the Web.

The burden on the part of authors is minimized by allowing submission through *email*, *ftp* and *Web uploads*, in several flavors, accomodating common practise on various computer platforms: Unix, vms, Windows 95, Macintosh, *etc.*

2.2 Submission

The ESS should allow for submissions through *email*, *ftp*, and *Web uploads*⁵, in various ways, accomodating common practises on different computer platforms: Unix, Windows 95, Macintosh, *etcetera*. The differences among these systems are mostly superficial: underneath the different appearances and user interfaces, the email, ftp, and Web programs rely on standardized MIME⁶ types to handle

⁵Of these submission methods, the LANL E-Print archive considers Web uploads the most general and robust, because it is applicable across computer platforms, and requires only very straight forward actions from the authors.

⁶MIME: Multipurpose Internet Mail Extensions. This standard indicates the type of the file (text, graphics, sound, HTML, *etc.*), so it may be handled properly by programs sending

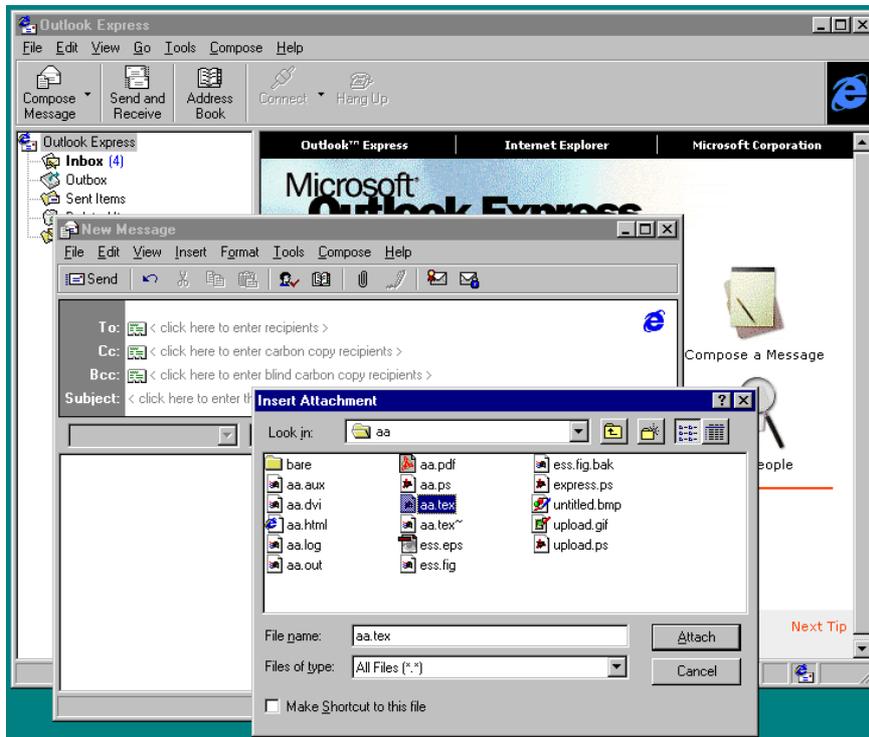


Figure 2: Email submission. The email program Outlook Express (included with Microsoft's Internet Explorer 4.0) allows the author to select the files which should be attached to his email submission. This is what an author might use on a PC running Windows 95.

different kinds of files, e.g. in email inclusions or attachments. This allows for the automated handling of submissions of various kinds, in a relatively easy way.

There are various ways in which a collection of files may be grouped into a single file (archive), as well as ways in which larger files may be compressed into smaller ones, allowing for more efficient handling and network traffic. Examples are *tar*, *gnu zip*, and *compress* for Unix environments, *pkzip* and *WinZip* for DOS and Windows 95 environments, and *BinHex* for Macintosh. The ESS should allow for submissions in each of these forms. Implementing scripts and/or programs that handle such submissions should not present a capable programmer with any severe problems.

2.3 Technical Notes

2.3.1 Email

In their instructions, it should be made clear to authors that they are submitting to an automated service, so they should not include any information intended

and receiving files via the Internet. Originally intended and used for email programs, but now extensively used for all kinds of communications through the Internet, notably the World Wide Web, with its 'multi media' capabilities.

for a human reader. The email addresses for editors and submissions should be clearly distinct.

There should be separate email addresses for *Letters*, *Main Journal*, and *Supplement Series* (e.g. *aaletter@aa.eso.org*, *aamain@aa.eso.org*, and *aasuppl@aa.eso.org*).

As the subject of a single or multiple email submission, authors should be instructed to use the unique *identifier* which they received from the editors when they indicated their intent to submit a paper. The editors get the identifier from the ESS, upon a request through the ESS *Web interface* for editors.

The ESS should allow for submissions as *email attachments* (see figure 2), and as ‘hand crafted’ *uu* or *mime* encoded (*gnu*) *zip* or *compress (tar)* files.

A program or script should monitor incoming mail, and take appropriate action upon the arrival of a manuscript: unpacking, processing, and email notification of authors and editors.

2.3.2 Ftp

An *ftp* site should be set up, in much the same way as an ‘anonymous’ *ftp* site. Rather than ‘anonymous’, it should allow for the usernames *aaletter*, *aamain*, and *aasuppl*, which direct the author(s) to the appropriate uploads area.

The authors should create a directory of their own, giving it the name of the *identifier*, supplied to them by the editors (cf. the technical note on email submission above). They should move to that directory, and put the files that comprise their submission in there⁷.

A script or program should monitor the *ftp* areas, and take appropriate action when a new submission is found: move it to a secure place, and process it as outlined above for email submissions. Rather than taking action ‘every hour on the hour’ (ApJ practise), the monitoring program could take action one hour after arrival of the last file, leaving authors ample time for multiple file uploads.

For security reasons, the *ftp* site could be configured such that only *uploads* are allowed, and not *downloads*, although authors should be able to inspect their directory to verify that their submission is in place (with commands such as *ls* and *dir*).

2.3.3 Web uploads

For submission through Web upload, authors should be provided with a URL, an *identifier*, and a *password*. When they enter the URL in their Web browser, authors are prompted to identify themselves by the supplied *identifier* and *password*. They are then presented with a *form*, which asks them to complete several fields with details about their submission, and with the name of the main or master L^AT_EX file of their manuscript. Figure 3 gives an example of what this might look like.

Upon completion of the form, the details *and* the file are uploaded (by simply pressing a ‘Submit’ button). Processing of the initial form and the file by the ESS

⁷This is the scheme employed for *ftp* submission by ApJ. It is unlike the scheme employed by the LANL E-Print archive: here all authors upload their files to the same (top-level) directory. This practise may cause problems when different authors accidentally use the same names for their files. However, at the LANL it is felt that asking authors to create their own directory, and place their files in there, is also cause for problems.

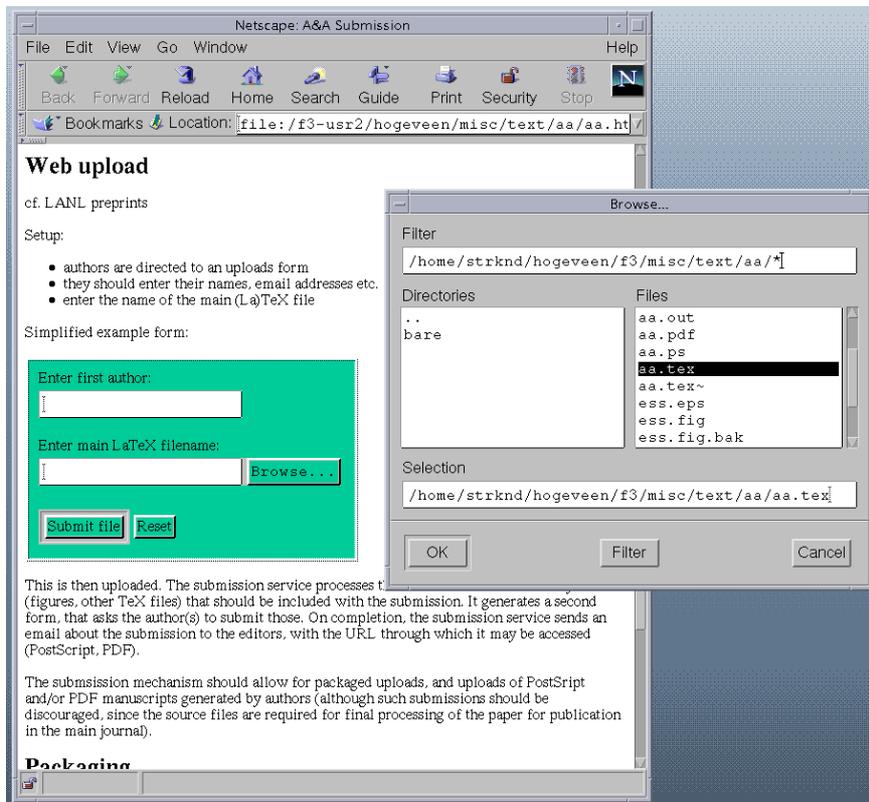


Figure 3: Web upload. Pressing the ‘Browse’ button in the ESS Web submission form (left panel), presents the author with a file selection box that is typical to his computing environment (right panel). Thus, the author may select files for uploading in a way he is familiar with. The example shows Netscape 4.0 under the CDE window manager for X-window environments, commonly used on Unix workstations.

results in a subsequent form, which asks the author(s) to submit any remaining files related to the submission. The ESS determines which additional files are needed from the initial upload. If the initial file was a (compressed) archive, comprising all necessary files, the Web uploads service simply acknowledges that it was received.

The upload(s) are unpacked and processed, and the upload process is completed by presenting the author(s) with a Web page that allows them to inspect the PostScript and PDF files produced by the ESS.

2.3.4 Packaging

At the LANL E-Print archive, a script *ufiles*⁸ is provided which aids authors in the preparation of a *uencoded*, *gzipped tar* archive of their submission.

⁸<http://xxx.lanl.gov/help/packaging>

2.4 Processing

For all submissions, a separate directory or folder is created, in which the files, associated to that particular submission, are stored.

Upon arrival, a manuscript is processed (L^AT_EX-ed), and converted into PostScript and PDF. Authentication for that particular directory is set up (identifier and password), and an email is sent to the submitting authors, who may want to verify that their submission was received properly, and to the editors, to inform them of the new submission. The PostScript and PDF files are accessible at a Web site that is part of the ESS.

When automated processing fails, the submitting author is informed, by email, or by a response from the Web uploads service. The most obvious reason for a submission to fail is an error on the part of the author: faulty L^AT_EX markup, a missing file, or an error of a similar nature. The automated process is a reflection of the current procedures for submitting the final version of an electronic manuscript to the publishers. If an automated submission fails, the manuscript could most likely not be processed by the publishers either.

2.5 Editorial

The editors are informed of the arrival of a new manuscript by an automatically generated email. They can inspect the new submission through its URL, identifier, and password.

The editors consult their referees (via email), and when one has agreed to read the paper, (s)he is provided with the details that allows him or her to access the online version. When a referee prefers to receive a printed copy, this could be provided by the editorial staff, who should be able to produce a printed copy from the online (PDF) version of the manuscript.

When a referee suggests modifications to the original manuscript, authors may use the same identifier and password combination to submit a revised version of their paper. This would be processed by the ESS in much the same way as the original submission, with again a notification to the editors.

When the final verdict of the referee is received, the authors have to be informed, and the manuscript should be passed on to the publishers, or removed. To allow the editors to take such actions, the ESS should provide a simple but effective *Editors' Web Interface*. The Web interface should have buttons to forward a paper and its associated files to the publishers⁹, and to delete them. The interface might also show the editors which papers are still in the refereeing processes, and it could alert them when a referee is overdue.

3 Resources

The ESS should be built from existing programs (email, ftp, and Web clients and servers, Acrobat Distiller, T_EX, *etc.*), and several scripts (shell, Perl, Tcl/Tk) to make these work together.

⁹The approved version of a manuscript has been submitted to the ESS. The editors can forward the files of the approved manuscript to the publishers by simply pressing a button. With the ESS in place, there really is no need to ask the authors to (re)submit their paper to the publishers.

If no host (computer) can be found at the site where the ESS will be installed (publishers, ESO, CDS, or . . .), then a dedicated ‘medium sized’ workstation will be required, with ample disk space (an annual volume of the online edition of A&A currently occupies about 2 Giga Bytes). Back up facilities, to replace the entire system if needed, should be considered.

It is estimated that the initial development and testing of the ESS will take about 2 months of work by a single skilled programmer. After its implementation, incidental attention of the programmer may be required (in all about two weeks over a period of 4 to 6 months) for the correction of minor shortcomings. After that, the ESS should run largely unattended, and no other intervention than perhaps an occasional restart should be needed. This could be done by the system manager responsible for the hardware. Maybe once a year the system may need a programmer for a few days or a week, to adapt the ESS to new developments in ICT¹⁰.

4 Concluding Remarks

When the consent of a referee is received, the editors might move the paper to a public access area of the Web server associated to the ESS. By this move, a paper would effectively be published on the Web.

Extending the ESS with this capability would make it a full fledged Electronic Publishing System. If required, an EPS could be extended with the facilities to automatically produce HTML versions of papers.

Scripts and programs could be devised to group papers into annual volumes and monthly issues. Other scripts could group issues into quarterly sub-volumes, suitable for distribution on CDROM. Writing such scripts and programs would require relatively little effort, and they will run largely unattended.

¹⁰ICT: Information and Communication Technology.