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INES Version 3.0: Functionalities and Contents

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Abstract. We describe the functionalities and contents of Version 3.0 of the IUE Newly Extracted Spectra (INES) System, which has been developed jointly by ESA and LAEFF, and which has been operational at the INES Principal Centre (LAEFF) since August 2000. At the time of writing, it is being distributed to the National Hosts.

1. Introduction

The IUE Newly Extracted Spectra (INES) System was developed by the ESA-IUE observatory at VILSPA in order to make IUE data available in a simple and efficient way. The system design was driven by the concept of delivering fully calibrated data, ready for analysis, with minimum development and maintenance costs (González-Riestra et al. 2001). Special attention was given to making the graphical user interface, tuned for the occasional users of the archive, display useful scientific information in a simple form.

INES has been operational since November 1997. In this paper we will summarize the main functionalities of the INES Version 3.0. This release includes new features such as a built-in name resolver, homogenization of object names and coordinates, query by list of objects, and an improved data viewer facility, including errors, quality flags and updated bibliographic references. An overall description of the system capabilities is given in the next section. A detailed user guide to the system can be found in the INES Newsletter (2000, `http://iuearc.vilspa.esa.es/Ines_PC/Newsletter.pdf`).

2. Functionalities

The functionalities of Version 3.0 of the INES data distribution system are outlined below.

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Archive Search: The INES archive contains 110033 entries. The query to the access catalogue is made by means of an HTML fill-in form with permits the Archive to be queried by object name, coordinates, object type, observing date, instrumental parameters and object or image list (see Figure 1). Four predefined output fields are available, emphasising General, Observation, Variability and Pointing information, and each may be output in HTML, ASCII or as tab- or comma-separated values. The output fields may be ordered by date and time of the observation, coordinates, camera and image number, object type and object name. The system allows one to select either the Principal Centre at LAEFF, Madrid, Spain (`http://ines.vilspa.esa.es`) or the Mirror Site at CADC, Victoria, Canada (`http://ines.hia.nrc.ca`).

INES version 3.0 has a built-in name resolver utility which permits one to query the Archive using any of the object names provided by SIMBAD. The Name Resolver gives 168571 identifications for the 9494 astronomical objects contained in the INES access catalogue.

Results from Search: The following utilities are provided in HTML output format (Figure 2):

Links to Publications: Associated with each spectrum is the number of publications which have made use of it. By clicking the link, the reference of the publication and links to the abstract and/or the full paper are obtained through the ADS facility. In addition to this, ADS also includes direct links to the INES archive. The IUE publication catalogue includes 38812 images referenced in 2103 scientific articles published before January, 2000.

Data Previews: A browse plot of a spectrum including bad pixels and flux errors can be generated by clicking on the corresponding link. A panel summarising the observation is displayed next to the plot, and the full FITS header can be listed from there. For a high resolution spectrum, zoom plots of 30 Å of selected regions may be generated transparently on the Principal Centre/Mirror server by entering the desired central wavelength. A copy of a browse or zoom plot can be saved as a GIF file. (Figure 3).

FITS Header Display: Links are provided to display the FITS primary and binary table headers of each requested low resolution or re-binned spectrum.

Data Retrieval: Spectra may be retrieved individually or in groups. Multiple retrieval of concatenated, high resolution spectra can be restricted to a specific wavelength interval. Spectra are delivered as FITS files. Single spectra are retrieved uncompressed from the appropriate repository: Principal Centre/Mirror Site or National Hosts.

For multiple retrieval, it is possible to include/exclude individual spectra. Inclusion/exclusion of files by type is also possible. Multiple spectrum retrieval generates a packed file in either tar or ZIP format. Compression of packed files is also possible and recommended for network efficiency, in particular when downloading large data sets.

On-line Help: Help on a specific keyword can be obtained by simply clicking on it.

On-line Access to Project Documentation: A detailed description of the spacecraft, the IUE Final Archive and the INES System is given in the on-line project documentation. The information is stored in PDF format files to be easily browsed.

Access Statistics: The distribution package also includes some tools to help in the administration of the National Hosts. These tools, implemented in a set of Perl scripts, allow one to generate access statistics for the National Host with different views and selection of the time period, and to monitor the status of the network by using "ping" and "traceroute" in an interactive form.

HelpDesk: The Principal Centre includes a Help Desk facility, based on "JitterBug", to channel questions and to provide continuous support to users of the Archive.

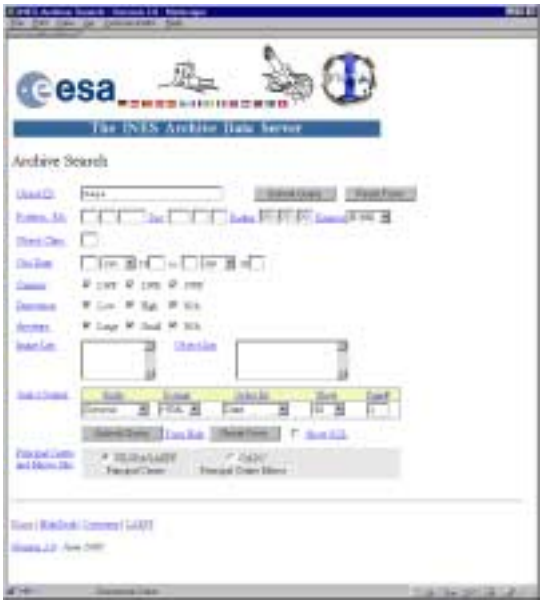

Figure 1. Search capabilities of the INES System (see Section 2 for details).

References

González-Riestra, R., Cassatella, A., Solano, E., Altamore, A., & Wamsteker, W. 2000, A&AS, 141, 343

González-Riestra, R., et al. 2001, this volume, 156

Figure 2. Result of the search displayed in Figure 1. The different sources of data are indicated by the grey areas (Principal Centre/Mirror Site) and the white fields (National Host). Data are retrieved in a transparent way for the end user regardless of the repository.

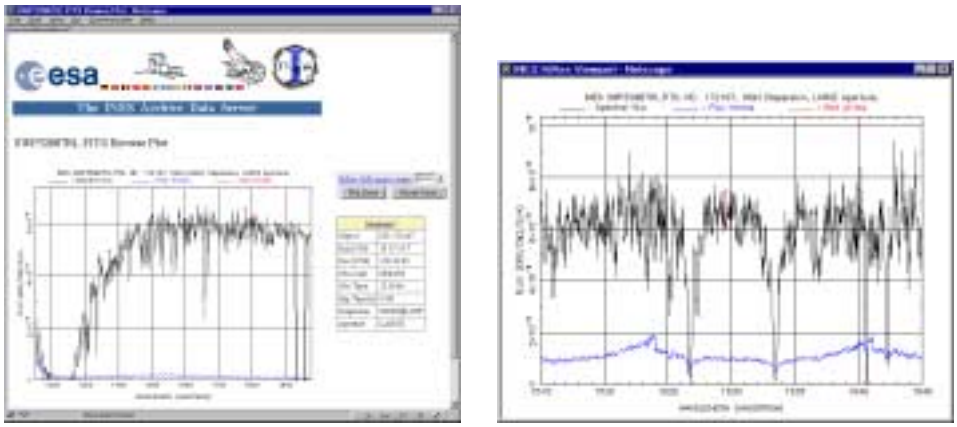

Figure 3. Data previewing capabilities supplied within the INES system. **Left panel:** high resolution concatenated spectrum re-binned to the low dispersion wavelength scale (González-Riestra et al. 2000). **Right panel:** The active box (HiRes 30 Å zoom centre) allows the choice of part of the high resolution data.