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Robert Dukes

College of Charleston, dukesr@cofc.edu

Kwayera Davis

College of Charleston

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A Two Part Review: The Encyclopedia of Astronomy and Astrophysics —

Views from a Professor and a Student

by **Robert Dukes** (Associate Dean, Sciences and Mathematics, Professor of Physics and Astronomy, College of Charleston, Charleston, SC 29424; Phone: 843-953-8073; Fax: 843-953-4824) <dukesr@cofc.edu>
www.cofc.edu/~dukesr/ and **Kwayera Davis** (Department of Physics and Astronomy, College of Charleston)

A Professor's View

by **Robert Dukes** (Professor of Physics and Astronomy, College of Charleston) <dukesr@cofc.edu>

Introduction

This is one part of a two-part review of *The Encyclopedia of Astronomy and Astrophysics*. I am an astronomer with over twenty-five years experience teaching astronomy to undergraduates and supervising many of these undergraduates in their research. I am writing this from my perspective. The companion piece has been written by one of my students discussing the *Encyclopedia* from the student's point of view. This student is majoring in physics with a concentration in astronomy and has been involved in astronomical research for nearly two years. Hence he represents the type of student that I feel will benefit most from the *Encyclopedia*.

The *Encyclopedia* has an online edition available on a yearly subscription basis. Faculty need to be able to both recommend whether or not a library should obtain this subscription and then, if the answer is yes, decide on how to best utilize it. The adver-

tised advantages to the online edition are access from any computer on a campus, powerful search capabilities, and frequent updates. This review will be based on both the content of the *Encyclopedia* and how well the advertised advantages are met.

Using the Encyclopedia

The *Encyclopedia* consists of long articles, short descriptions or definitions, and brief biographies. The long articles are signed by the authors who for the most part are recognized authorities in the subject matter of the articles. How then will I use the *Encyclopedia* with students? I will use articles in the areas I conduct research with undergraduates in to provide background information for new students. I will use some of the less technical articles (or less technical parts of certain articles) to supplement our introductory astronomy text. I suspect that other instructors will also. As every instructor knows, in-

troductory texts are never as detailed as instructors would like in certain areas. Instructors can individualize their courses through special lectures or handouts. The *Encyclopedia* provides yet another means. Especially appealing is the fact that the articles can be downloaded as PDF files.

I have examined some of the articles in fields I am familiar with as well as fields I would like to learn something more about. In every case I have learned something. For example, the article on Variable Stars gives one of the best introductions to "non-radial pulsation" that I have seen. This will definitely be required reading for all of my research students. I will assign portions of it to my introductory students. Similarly, the article on "Gamma Ray Astronomy" helped me learn something about the field of research of two of my colleagues. One of them has indicated that he, too, will make this required reading for his students.

Level of Material/Treatment

The level of the material in the individual articles is quite varied. This presents a problem for the potential user. The majority of the long articles are suitable for advanced undergraduates and even as a review for gradu-

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users? Surprisingly little! There were few differences among end-users whether they are from traditional or virtual schools. Little difference in perception between the librarians and the end-users was found. The librarians were just as open, enthusiastic, excited, and willing to experiment with electronic reference tools as the end-users.

When planning this column the author-editors expected to find differences, possibly significant ones, between the traditional brick and mortar schools, **Guilford** and **UNM**, and the virtual school, **WGU**. As expected, the **WGU** end-users had more experience in using online reference tools than most of the end-users from **UNM** and all those from **Guilford**, but their attitudes toward these tools were remarkably similar. Specifically, the **WGU** end-users were more aware of the variety of electronic reference tools available to them. This is to

be expected since **WGU** has no physical campus with a library building that houses print materials. The librarians from both **Guilford** and **UNM** commented on the need for more bibliographic instruction and one-on-one sessions for patron information literacy and to improve critical thinking about evaluating Web resources.

Print is not dead! Even the majority of end-users from **WGU** felt that print versions of ready reference tools should be retained, as did most of the **Guilford** and **UNM** end-users. Reasons cited included differences in learning styles and the ability to use print "when the computers are down or the electricity goes out." This is not to say that most end-users do not prefer the electronic version. All the librarians shared this view, but expressed concerns that continually shrinking budgets may make this more challenging in the future.

All the librarians were aware that sometimes students accept any online reference

resource, even a questionable one, rather than use a print reference source. None of the librarians felt challenged by this, rather they felt that it presents an opportunity for them to work with end-users and show them how to better evaluate these resources. Some end-users' preferences for using any electronic reference tools that they can find should not be viewed as a conflict for librarians but as a leaning opportunity — "a good thing, not a bad one."

What are the major concerns of end-users and just how critical are they? End-users want to find information quickly and easily, they want it to be current, and they want to be able to access it anytime from anyplace. What could be simpler than that? While some are concerned about the quality of the resource, very few mentioned it as a concern. The end-users are not aware of the difference between the electronic reference tools that the library pays for and those available free on the Internet. And really, why should they be?

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ate students. The shorter definitions, biographies, and portions of the long articles are geared more toward the beginning or general education student.

In fact, this unevenness of treatment is a hallmark of the *Encyclopedia*. Different authors who handle their assignment quite differently write articles on very similar objects. For example, there is a summary article on the Galilean satellites of Jupiter that goes into significant detail on the features of each. Then there are individual articles on each of the four satellites. Those on Callisto and Ganymede are written by the same authors and include a color photo of the planet. The article on Io has four black and white photos but no color despite the fact that Io is perhaps the most colorful object in the solar system.

There are also other redundancies. For example, there are articles on "Exoplanets" and "Extrasolar Planets and Brown Dwarf Companions" which cover much of the same ground. It is difficult to see why the two articles could not have been combined into one.

Bibliographies

Most of the long articles has a bibliography of sources for further information. The bibliographies are of uneven quality. Many have a one-sentence annotation for each reference. The references listed are usually to the primary literature with little or no mention of secondary sources, which would be more accessible to beginning students.

Bibliographic entries usually have a "copybutton" that opens a window containing the bibliographic information, which can be entered into a word processor. This would be even better if the entries were divided into fields with the fields separated by tabs so they could be imported into a database. Some entries also contain a "links" button. This can take the user to various places. For *Icarus*, for example, you are carried to the *Icarus* Website where an abstract is available. If your library subscribes to *Icarus*, then a PDF copy of the article may be downloaded. A link to an *Astronomical Journal* article will take you to their Website where there is an additional link to the Astrophysics Data Service Website. This site makes available scanned articles from most major astronomical journals.

Updating of Articles

Updates have been handled in two ways. Some articles have apparently been rewritten while others have a paragraph or two attached to the end titled "Web Update." It is not clear on casual inspection why some of the rewritten articles have been updated. For example, the article on "Aristotle" is listed as updated. There is no indication of what information on someone who lived two millennia ago has been discovered requiring updating.

As mentioned above, the Web Updates are attached to the end of the article. These updates are not explicitly dated (the revision date of the article is given) and it is not completely clear that they have been prepared by the original author. For example, the two articles mentioned above on extrasolar planets are by different authors. Despite this, they share a Web update in common. In "Exoplanets" it is labeled Web Update while in "Extrasolar Planets and Brown Dwarf Companions" it is labeled Web Update 1 and followed by a Web Update 2. Both of these articles are dated July 2001 while the Web Updates are undated.

User Interface

Initially, the user interface appears well designed. Unfortunately, the appearance is not borne out in practice. Options are given to browse by contributor or title. There are also several search commands. There is a "Quick Search" feature that works poorly. The standard search command allows for search by author, title, illustration, or text words. There is no subject search. A phrase may be entered in one of two search boxes. This may then be combined with another word or phrase with a Boolean OR, AND, or NOT. There is an advanced search feature, which allows simultaneous searches for any combination of two or more of author, title, illustration, and text words. Unfortunately, the search feature needs a great deal of debugging. For example, entering the two-word phrase "extrasolar planets" gives an error message: *Error serving: ... "</footnote>" expected.*

This occurs no matter which search option is used and despite the fact that the articles mentioned above exist. One of these includes "extrasolar planets" in the title while both do in the text. I have experienced many similar instances where a search results in an error message. I know that students would be bombarding the instructor with complaints over this defect.

Long articles have a table of contents box in a frame to the left of the article. While the entire article can be accessed by scrolling, if a user attempts to move to a different part of the article by clicking on an item in the table of contents, the article has to be reloaded. This

is clearly a defect which should be corrected.

Greek Letters

There are many difficulties in the way the *Encyclopedia* handles Greek letters (many astronomical objects are designated by a Greek letter followed by a constellation name). In the first place, the *Encyclopedia* is clearly designed for Internet Explorer since all Greek letters and assorted other special symbols are replaced by "?" marks in Netscape. An even more important issue is that there is no way of entering a Greek letter into a search. Thus while searching for information on Beta Cephei stars I found only one reference in a brief article on the constellation Pegasus which told me that gamma Pegasi is a Beta Cephei star. The reason for this is that in the several articles discussing stellar variability Beta Cephei stars are designated b Cephei stars. The publisher should give this defect their immediate attention.

Miscellaneous

I have noted several other minor (?) errors or problems. For example, the Ganymede article includes a reference in the text to another photo (Figure 2) which is non-existent. The very informative article "Variable Stars" includes an analogy which reveals the author has forgotten his freshman physics. He makes the statement that "the period of a simple pendulum is independent of the amplitude of its swing." Our freshman all do an experiment that demonstrates that this is not the case. Someone should have caught this in the editorial process. Alphabetizing in the Browser lists is peculiar. Words whose second letters bear either an accent or umlaut appear prior to entries whose second character is a number.

Bottom Line

We now come to the bottom line. Should faculty recommend and librarians acquire this resource? In our own case it is clear. Despite the difficulties, it will be invaluable for our students in upper level astronomy courses and well worth the cost. If we did not have these courses, I would hesitate to recommend the online, annual subscription version. Students in the general education astronomy courses would find most of the content too technical.

A Student's View

by **Kwayera Davis** (Department of Physics and Astronomy, College of Charleston) <dukesr@cofc.edu>

Introduction

The *Encyclopedia of Astronomy and Astrophysics* is a compilation of thousands of articles designed to serve as a reference source to those seeking broad information on astronomy. The online beta version of this encyclopedia claims to offer services that lend themselves to being

utilized in a college curriculum. Indeed, the services offered are excellent, but there still remain bugs to be eliminated before the final version begins operation.

Content

The database itself is the most important part of the package. With thousands of articles from over 800 experts, the encyclopedia is quite impressive. The information con-

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tained within ranges from very simple descriptions to very complex and detailed explanations. This was sometimes frustrating, as the articles were not labeled as to their complexity. Regardless, the main question is what can it do for the student, who will be its primary user. For those interested in simply finding out some information on a subject for their own information, the encyclopedia is one of the best starting points one could pick as it can usually give you a simple definition, detailed articles and links to others sources on the Web. For those who are doing something more substantial such as writing a term paper, the encyclopedia's usefulness depends on the subject selected. If the topic is common like Saturn, one can find enough information to keep them busy within the encyclopedia. If the topic is less common, like Cepheid variable stars, one will be able to find some useable sources such as a very good introduction to the topic, and some relevant material that relates to it. However, there will not be enough information within the site alone for substantial use in a term paper. Still, no matter the topic, the encyclopedia probably has something usable and that is the best feature that it boasts and is what contributed the most to my positive recommendation.

Searching and Other Features

To continue, let us list the features the *Encyclopedia* offers in various degrees of functionality. There is a search feature, a breaking news section, an option to personalize the site, workgroup areas for use in classes, Web updates, and a links page.

The search feature is perhaps the most obvious and useful tool available in an online version of an encyclopedia. There are many search options ranging from quick to advanced searches that offer the ability to search for information on subjects by article title, author, illustration, or in general. The search option has some bugs though. For example it cannot handle brackets or parentheses in the search field.

Next is the news section that claims to have articles specially prepared for the encyclopedia. The items are posted often with articles coming in usually no more than a week apart and usually days apart. The content, however, is less impressive with articles only a paragraph to a page long and apparently being just summaries of press releases. The articles contain links to these press releases in some cases and in others just to the general site from which the information came.

The Personal Touch

The personalization feature is nice because it allows you to bookmark articles and save lengthy search criteria that are a pain to type again. It is quick to sign up for and does not require extensive personal information. The book-marking tool is useful in that it al-

lows quick access to previously viewed articles and lets you organize them into folders. The bookmarks page did not work at home but did while on campus. With the save search feature you can enter a long search to find everything the encyclopedia contains on a very specific subject. Then you can save that search string so that every time you want to see the search results on that subject it is not necessary to waste time retyping the search.

The workgroup areas are designed to let teachers post bookmarks of articles they want their students to read. The students are given access to the workgroup and thus do not have to search the site for a reading assignment. In testing this feature from a student's perspective, I found it quite useful. Linking to the assigned articles was easy with the bookmarking feature. I was also able to view files uploaded by the instructor (workgroup administrator) in the additional content section. I could either download the files or view them within the page, although the latter restricted my ability to manipulate the files. The Web links page in which the workgroup administrator set links to Websites was not functioning in that an error occurred when the links were being created and I was unable to test its usefulness.

On the Down Side

The Web updates that the site seemed to be so proud of were nothing to be impressed by. In most cases, they were only an added paragraph and the preceding articles were not rewritten. For example, the article would talk about a probe being on its way to a planet and then the paragraph update at the end would say that the probe had landed several weeks ago.

The links page was divided into subject areas with most having a half a dozen links which is not impressive considering the vast number of sites out there. The links they had were pretty much all working and were generally to very good sites.

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Got a note from the oh-so-incredibly-fabulous **Heather Miller** <hm766@csc.albany.edu> just the other day. **Heather's** son graduated from college and she took an actual, honest-to-goodness vacation. Still, and anyway, **Heather** has continued to work on the **Charleston Conference** planning. Thanks to all the people who have helped with this, particularly the saintly **Rosann Bazirjian** <rvb9@psulias.psu.edu>.

Swets Blackwell has recently launched the functionality for document delivery via **SwetsnetNavigator**, their electronic journal service. **Document delivery** is now available from such major document suppliers as **Infotrieve**, the **British Library** and **CISTI**. press@nl.swetsblackwell.com.

Recently heard from **Roy M. Mersky** (Professor of Law and Director of Research,

The service is offered through the college and as the current setup goes, it is restricted in the number of simultaneous users to three. This is a large problem because if a class assignment is made everyone will wait to read it until the night before and find the service busy. Even if by some fluke everyone reads their assignment ahead of time, if there is a quiz the next day, the night before everyone will try to log on to review. The ability to download PDFs of the articles partially helps with this but not significantly.

By far the largest problem with the service is that it is very slow. While on campus on a usually fast network, the performance was slower than the normal Web page loading times on my 56k modem at home. Additionally, while on that slow connection logged in as an off campus user, the loading speeds were even slower. To those with a slow connection, hope is not lost though. The slowest part by far is logging into the site. Once the page begins to load, go get a drink or a snack or something because it will literally take around a minute. This will be the slowest it gets though. When going between pages it is about average speed but slows down quite a bit while using the search feature. As long as one has patience this is bearable but just by a bit. It is, by far, my biggest complaint and the one thing I hope is fixed by the time the finished version is released.

Conclusion

Overall, in testing this service, I found that I would recommend its use. However, due to its lagging speed and numerous bugs one must approach it with a patient attitude. I feel that if these problems are fixed, the extensive information offered will reach a much larger audience that will make great use of its features and bring the *Encyclopedia* to the status of one of the most used astronomical references currently available.

Jamail Center for Legal Research, U. of Texas, Austin <Rmersky@mail.law.utexas.edu> about the upcoming **Language and the Law Conference** that the **Center** is hosting in December 6 - 8 of this year. This special international conference in celebration of the library's Millionth Volume, will bring together some of the leading legal scholars in the world to discuss the impact of language on the law from various perspectives. It sounds quite interesting and I would love to go! More information on the **Language and the Law Conference**—including the full program schedule, registration details, and contact numbers for the conference hotel—is available at <http://www.law.utexas.edu/conference>. Please don't hesitate to contact **Roy** at (512) 471-7735 if you have any specific questions or comments.

More college graduations and vacations!. **Norm Desmarais** <normd@postoffice.providence.edu> daughter **Jeanne** graduated

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