P1.2 WEATHER WORLD 2010: A CUSTOMIZABLE, USER-ORIENTED WWW SITE

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Weather World 2010 (WW2010), located at <http://ww2010.atmos.uiuc.edu/> is an extensive weather and environmental information web server that integrates real-time data products with explanatory materials using state-of-the-art Internet technologies. Many of the features and strategies employed in WW2010 were motivated by our own experiences providing meteorological data and educational material over the Internet and presenting at teacher training workshops. Further, we have received valuable feedback from teachers and students.

Integrated with the server is a growing number of Internet-based educational resources (Bramer, 1998) featuring instructional modules that use the power of multimedia and the dynamic nature of the web to instruct students in remote sensing and atmospheric sciences. These modules introduce a variety of topics including El Nino, Severe Storms, Radar Meteorology, and Cloud Identification. In addition, a collection of classroom activities have been constructed to help teachers integrate these instructional resources into their daily curriculum.

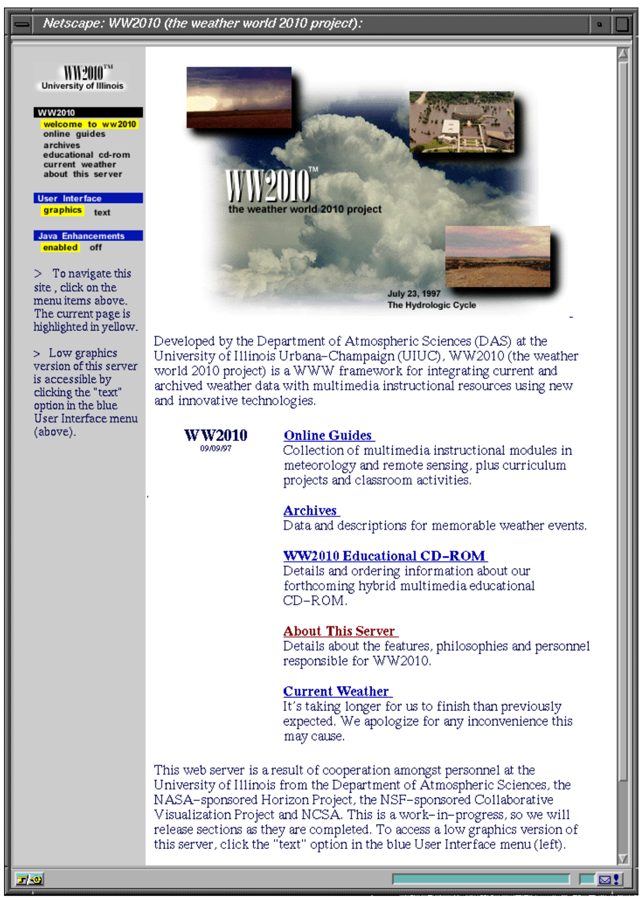

Figure 1. Weather World 2010 Introductory Page

The contents of the server have been organized into a logical hierarchy by subject and subtopic areas and can be efficiently navigated using a fully automated menuing system (Wojtowicz 1998), enabling users to move between hundreds of pages with only a few clicks and without getting hopelessly lost. Graphical and text-based user interfaces exist for the entire web server to accommodate a variety of user network and hardware capabilities.

WW2010 features a large collection of weather products including all the standard maps and images one expects to find on such a server, plus some specialized products rarely seen elsewhere such as isentropic maps. Each is customized to be easy to read, with colors and presentation carefully chosen to highlight the particular features each map is used for. The maps are produced using analysis software designed specifically for the WW2010 project that offers a new look to standard products. Each map or image is linked to a "helper section" that explains it in detail and provides links into the instructional modules for more detailed explanations.

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A CD-ROM version of the material is available which provides local access to the educational materials, student projects and activities, archived weather data, and links to the on-line version for access to real-time weather data. The CD-ROM version is primarily intended for use by the K-12 education community, especially those with limited or nonexistent Internet connectivity.

Java technology has been used to allow those with high-capability computers and fast network connections to enhance their data access. Java applets (Plutchak, 1998) are optionally available allowing image animation, dataset overlays, configurable scrolling text display, and other interactive capabilities not possible with static images and text.

Weather World 2010 demonstrates that the strengths of the World-Wide Web can be combined with a judicious use of newer technology to provide an enriching experience for a wide range of user needs with differing computer/browser capabilities.

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References

Bramer, D., Hall, S. E., Sridhar, M., Wojtowicz, D., Ramamurthy M., Wilhelmson, R. B., and Plutchak, J., 1998: The status and future of Hybrid Multimedia in education: The WW2010 Experience, Preprints, *Seventh Symposium on Education*, Phoenix AZ, Amer. Meteor. Soc.

Plutchak, J., Hall, S. E., Wojtowicz, D., Ramamurthy, M. K., and Wilhelmson, R. B, 1998: Java on the World Wide Web and Beyond, Preprints, *14th International Conference on Interactive Information Processing Systems for Meteorology, Oceanography, and Hydrology*, Phoenix AZ, Amer. Meteor. Soc.

Wojtowicz, D., Hall, S. E., Plutchak, J., Bramer, D., Ramamurthy, M. K., and Wilhelmson, R. B, 1998: The Technology Behind the Weather World 2010 Project WWW Content Management System, Preprints, *14th International Conference on Interactive Information Processing Systems for Meteorology, Oceanography, and Hydrology*, Phoenix AZ, Amer. Meteor. Soc.