Summary: We developed a web service that brings Virtual Observatory (VO) image data to the Google Sky desktop client. The service, KML Now!, gives the user a simple web-based image search interface that requires no specialized knowledge of image conversion, coordinate system conversion, or Google Sky’s KML metadata format. KML Now! uses VO Simple Image Access services to acquire images in the user’s search coordinates. Once images are acquired, server-side open-source conversion software generates Sky-compatible image and metadata files. Files are cached on the server, and KML is returned to the user. When opened in Google Sky, all images are automatically downloaded and placed in the desktop client.

How to use it: Point your web browser to the URL and use the search form.

1. Enter the search coordinates and select a VO image service. Click “Cone Search”.
2. Open KML document with Google Earth.
3. New images are in “Temporary Places” folder in sidebar.

How it works... What is KML Now! doing?

KML Now! uses Python and 3rd-party open-source software to acquire FITS images and make them Google Sky ready. The apache & django web framework improves code organization, allows for unit testing, provides simple administration via the web, and enables scalability.

1. Query the VO image service. The VO Command Line Interface tool queries the image service, which provides URLs to image data.
2. Download FITS image data to server.
3. FITS → PNG, and FITS WCS → Google Sky KML. STIFF converts FITS to a TIFF image, and ImageMagick converts TIFF to PNG. wcs2kml converts the FITS World Coordinate System to Google-Sky-native KML and warps the PNG for projection on the celestial sphere.
5. Send launcher KML to user. One KML document exists for each image. The user is given a “launcher” that points to all appropriate KML files on the server. Google Sky downloads the server-side KML and PNG images for display on the local desktop using KML NetworkLinks.

Future Development:
1. KML Now! search form inside Google Sky
2. Add metadata to image “balloons” (frequency, source name, observation date, etc.)
3. KML Now! “showcase” of best searches
4. User-friendly error handling

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