



## Setting Up and Using Browser Astronomy



Revision 1.1

### Introduction

Software Bisque's Browser Astronomy™ gives anyone with Internet access and a web browser (Microsoft® Internet Explorer™ Netscape® Navigator™, or Apple® Safari™ for example) the ability to remotely control observatories. This document describes how an observatory can setup its computers to allow browser-based observing.

### Minimum Requirements (Observatory)

Several minimum requirements must be satisfied in order for an observatory to provide access to browser-based observers:

- The observatory must be using a robotic telescope that can be controlled by TheSky Astronomy Software Level IV version 5 or TheSky6 Professional Edition (see "Configuring Browser Astronomy to use TheSky5 or TheSky6 " on page 6 for details).
- The observatory must be using a CCD camera that can be controlled by CCDSoft CCD Astronomy Software version 5.
- The computer that controls the telescope (with TheSky) and camera (with CCDSoft) must have the Windows 2000\* operating system (Service Pack 2 or later)\*\* or Windows XP installed.
- Microsoft Internet Information Server must be installed and properly configured (this software is provided with Windows 2000 and Windows XP, but is not installed by default).
- The Software Bisque IAServer Suite (TheSky Level IV, CCDSoft, IAServer application and the Scheduler application) must be installed and properly configured.
- Microsoft Access 2000 is required for scheduling users.

\*With slight modification to several Active-Server Page (ASP) files, Windows NT can be used as the host operating system. Contact Software Bisque if you cannot run Windows 2000 or Windows XP.

\*\*If your web server is going to be online for "real", be sure to apply all the latest security hot fixes for IIS before going live. Software Bisque highly recommends a properly configured hardware firewall in front of any IIS production server. Please see <http://www.microsoft.com/security/> and following the link for securing IIS.

## Minimum Requirements (End User)

In order to remotely control telescopes and acquire CCD images using Browser Astronomy, the end-user must have the following:

- Internet access.
- A computer capable of running Internet Browser software.
- Any Internet Browser (Netscape® Navigator™, Microsoft® Internet Explorer™ or other) installed on the computer. Note that Browser Astronomy will work under *any* operating system (Linux, Macintosh, Unix, Solaris, Windows, etc.).

## Installing and Setting Up Browser Astronomy (Observatory)

The following steps install the Browser Astronomy software on a Windows 2000 or Windows XP computer. The instructions below are for a computer named <MY COMPUTER NAME>. Be sure to use your actual computer name rather than <MY COMPUTER NAME>. (To determine the name of your computer, click **Start | Settings | Control Panel | Network and Dial-up Connections**. On the Network and Dial-up Connections window, click the Network Identification link on the left-hand side of the window. The **Full Computer Name** is displayed at the top of the Network Identification window.) It is assumed that the computer <MY COMPUTER NAME> already has the IAServer Suite installed, configured for your specific hardware, and functioning.

The computer must be running IAServer Suite along with CCDSoft and TheSky. The latest Software Bisque software updates are available at [www.bisque.com/download](http://www.bisque.com/download).

1. Install TheSky version 5.00.014 or later.
2. Install CCDSoft version 5.00.042 or later.
3. Install IAServer.
4. Delete the file `IA.DLL` from the IAServer folder. By default this file is located in the folder:

```
C:\Program Files\Software Bisque\IAServer"
```

Browser Astronomy installs a newer version of this file into the `C:\Program Files\Common Files\System` folder and these files will conflict the older file is not deleted.

5. Install Microsoft Access 2000.
6. Install Microsoft Internet Information Server (IIS). Click **Start | Settings | Control Panel | Add/Remove Programs**. On the Add/Remove Programs window, click the **Add/Remove Windows Components** icon on the left side of the screen. On the Windows Components Wizard window, select the **Internet Information Services (IIS)** option and then click **Next**. Follow

the onscreen instructions to complete the installation. You may need your Windows 2000 CD-ROM during the installation process. If your site is going up for “real” be sure to install SP1 of Windows 2000 and get the latest hot fixes from Microsoft for IIS as many serious security flaws have been corrected in these patches. Software Bisque highly recommends that production IIS server’s be placed behind a firewall.

7. Ensure that IIS works correctly by starting a browser and typing

```
http://<MY COMPUTER NAME>
```

in the **Address** text box (IE 5) or **Location** text box (Netscape). Remember to use your actual computer name not <MY COMPUTER NAME> as in the example computer here. See “Installing and Setting Up Browser Astronomy” for details on how to determine your computer’s name. Be sure to run a browser on the machine itself and not on another computer on the network. By default, files in the home directory of IIS are only accessible when a browser is run locally. If your web server is functioning, you will see text describing IIS.

8. Install Browser Astronomy by copying the BrowserAstronomy folder from your installation media onto your hard drive. The Microsoft Windows default IIS web site home folder is C:\inetpub\wwwroot. After the copy is complete you should have all of the necessary files in the folder C:\INetPub\wwwroot\BrowserAstronomy. If your IIS site home folder is different, make the appropriate changes.

Note: this folder name must not include any spaces, otherwise user’s running Netscape® Navigator™ will not be able to access your observatory.

The Browser Astronomy files can be installed to *any* folder on your hard drive, provided a “virtual” folder is created using IIS. See the IIS documentation for details about creating virtual folders.

8. Ensure that IIS Active Server Pages (ASP) work by typing the URL into a browser:

```
http://<My Computer Name>/BrowserAstronomy/TestASP.asp
```

The page that is displayed will inform you if ASP is functioning or not.

9. Configure IIS to allow use of “out of process” components by typing the following URL into a browser:

```
http://<My Computer Name>/BrowserAstronomy/OOPComp.asp
```

Leave all the default values **and then click Set (very important)**. You **must restart your web server now!** To do this, click **Start | Settings |**

- Control Panel**, double-click the **Administrative Tools** icon and then double-click the **Internet Services Manager** icon. On the Internet Services Manager window, right-click the icon that shows your computer name and then click **Restart IIS**.
- Use the ODBC administrator to create a System DSN to the IAServer database. Click **Start | Settings | Administrative Tools | Data Sources (ODBC)** and then click the **System DSN** tab. On the **System DSN** tab, click **Add**. On the Create New Data Source window, choose **Microsoft Access Driver (\*.mdb)** and then click **Finish**. In the ODBC Microsoft Access window, type `IASERVER` in the **Data Source Name** text box. Click **Select** and navigate to the IAServer database and then click **OK**. Its default location is  
  
`c:\Program Files\Software Bisque\Scheduler\IAServer.mdb`  
  
Click **OK** to close the Data Source Administrator window.
  - Manually copy the license file (`TheSkyWeb.lic`) from the `BrowserAstronomy` folder into the folder where `Sky.exe` is installed. TheSky's default installation folder is: Without this license file, Browser Astronomy will not work.
  - Set the identity of both TheSky and CCDSOFT to "Interactive User." To do this, click **Start | Run**, type `DCOMCNFG` into the **Run** text box and then click **OK**. On the Distributed COM Configuration Properties window, in the application list, select the application named **Sky** and then click **Properties**. On the Sky Properties window, click the **Identity** tab. On the **Identity** tab, mark the **The Interactive User** option under the **Which user account do you want to use to run this application?** text and then click **OK**. Perform the same procedure for the application named **CCDSOFT**. On the Distributed COM Configuration Properties window, in the application list, select the application named **CCDSOFT** and then click **Properties**. On the CCDSOFT Properties window, click the **Identity** tab. On the **Identity** tab, mark the **The Interactive User** option under the **Which user account do you want to use to run this application?** text and then click **OK**. You will have to have run TheSky and CCDSOFT at least once to set these options, otherwise Sky and CCDSOFT will not be listed in the application list.
  - Launch IAServer and initiate the IAServer appropriate applications. Please see the IAServer documentation for instructions on setting up and using the IAServer suite. (Be sure that CCDSOFT, Camera, Server Settings has Allow Remote Connections turned on.)
  - Open the IAServer database and go to IAN Settings. If **UseSchedules** is set to **YES**, then user accounts must have a scheduled time to log on. For testing purposes you can set **UseSchedules** to **NO** — meaning anyone with a user account can log on. Also make sure **Unavailable** is set to **NO**.
  - Open a web browser and type the following URL:

`http://<My Computer Name>/BrowserAstronomy/`

The Browser Astronomy home page should be displayed giving you a link to either register or log on.

Once logged on, you (and remote users with the proper permission) can slew the telescope and take pictures (CCD images) of any desired object a web browser.

### Solutions to Common Error Messages

1. Add "Program File\Common Files\System" to your System path. Or you will get 800a01ad. See the Microsoft Knowledge Base article entitled "PRB: Active Server Pages Returns VBScript Runtime Error '800a01ad'"
2. If you get error 0xFFFFFFFFa, a folder named Temp must be created in the ObservatoryControl folder.
3. If you get error 0xFFFFFFFF9, make sure you video driver is running at more than 16 colors.
4. If you get "Invalid attribute/option" when you attempt to register a new user, you must add the IUSR\_XXXX account to the security attributes of the IAServer.mdb. Or the IAServer.mdb file is read only.
5. If you get the error "0x800A01FB" when attempting to register, change the

## Using Browser Astronomy

### Server-side Startup Procedure

If you are familiar with operation of TheSky and CCDSoft, the following section describes a high-level, step-by-step procedure to make your observatory available to remote users via a web browser. Refer to the IAServer's documentation for more details.

1. Launch TheSky and CCDSoft.
2. Connect your telescope to TheSky. From TheSky, click **Telescope | Link | Establish**.
3. Allow remote connections to TheSky. From TheSky, click **Telescope | Server Settings** and place a checkmark next to Allow Remote Connections. Click **OK**.
4. Connect your camera to CCDSoft. From CCDSoft, click **Camera | Link | Establish**.
5. Allow remote connections to CCDSoft. From CCDSoft, click **Camera | Server Settings** and place a checkmark next to Allow Remote Connections. Click **OK**.
6. Verify that your hardware is functioning properly. From TheSky, slew the telescope and check your TPoint model if one is present (remote clients get all the benefits from the IAServer's telescope model, without them even

owning or knowing of TPoint). From CCDSoft, take a CCD image; check the focus; check the camera's temperature setting.

7. Start Microsoft Access and schedule one or more users.

### **Client-side Startup Procedure**

1. Launch web browser.
2. Enter the URL of your web servers's Browser Astronomy directory.
3. Begin using the web-based interface to slew the telescope and acquire CCD images.

### **Configuring Browser Astronomy to use TheSky5 or TheSky6**

Browser Astronomy is easily configured to leverage TheSky5 or TheSky6. This is by design and is accomplished by editing the file global.asa and setting the "TheSkyProgID" application variable to the desired value. See the notes in global.asa for more details.