

## RadialWebServer User Guide

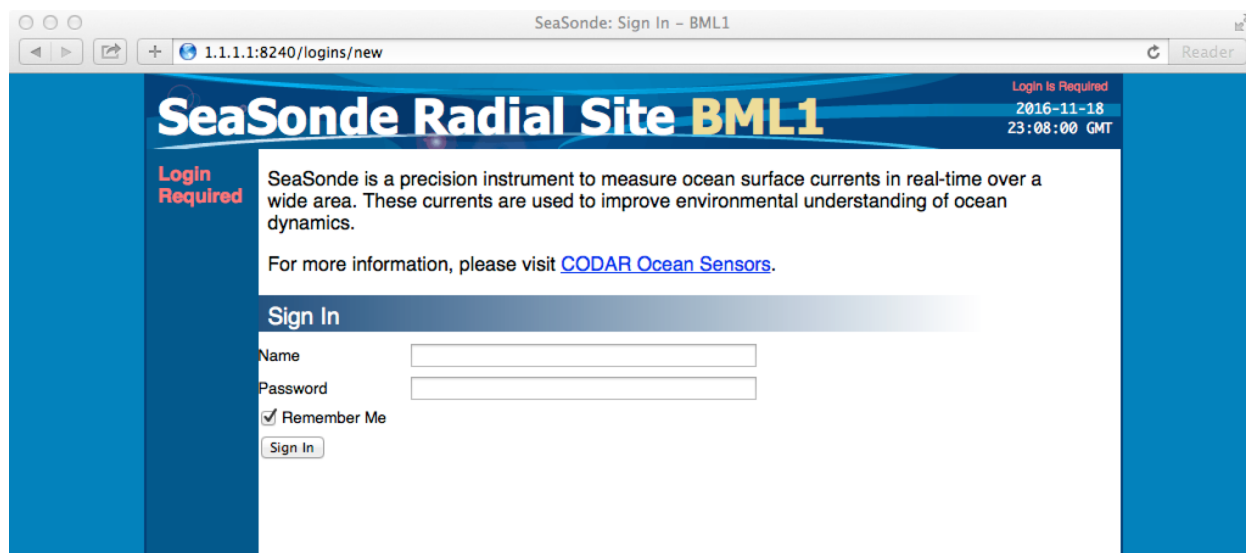
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Nov 21, 2016

### RadialWebServer User Guide

The RadialWebServer provides full access to a SeaSonde Radial Site's status and data through any modern client web browser like Safari, FireFox, Chrome, or Explorer (Not all browsers may be fully supported). Available actions include viewing and downloading site data, logging events and maintenance, and configuring some settings.

In order to access the site with a browser, you will need to know the site's IP or URL plus the port number (default is 8240) and a user account for the RadialWebServer. A default admin account is created when the RadialWebServer is installed. It is intended that you create a new admin account and other limited user accounts as needed.



The screenshot shows a web browser window titled "SeaSonde: Sign In - BML1". The address bar shows "1.1.1.1:8240/logins/new". The page has a blue header with the title "SeaSonde Radial Site BML1" and a "Login Required" status bar showing "2016-11-18 23:08:00 GMT". The main content area has a "Login Required" message and a "Sign In" section with fields for "Name" and "Password", a "Remember Me" checkbox, and a "Sign In" button. A link to "CODAR Ocean Sensors" is also present.

SeaSonde: Sign In - BML1

1.1.1.1:8240/logins/new

Reader

**SeaSonde Radial Site BML1**

Login Required

2016-11-18 23:08:00 GMT

SeaSonde is a precision instrument to measure ocean surface currents in real-time over a wide area. These currents are used to improve environmental understanding of ocean dynamics.

For more information, please visit [CODAR Ocean Sensors](#).

**Sign In**

Name

Password

☒ Remember Me

To connect, open your browser and enter 'x.x.x.x:port' where x.x.x.x is a static IP of the site and :port is the port number used to install the RadialWebServer (the default is :8240) If the RadialWebServer was configured to use port 80 then appending ':80' is optional. If the site is recognized, the browser will reformat your entry so that it looks something like this "http://1.1.1.1:8240/logins/new/" and you will be presented with the Login View.

SeaSonde: Sign In - BML1

1.1.1.1:8240/logins/new

SeaSonde Radial Site BML1

Login Required

SeaSonde is a precision instrument to measure ocean surface currents in real-time over a wide area. These currents are used to improve environmental understanding of ocean dynamics.

For more information, please visit [CODAR Ocean Sensors](#).

Sign In

Name

Password

☒ Remember Me

Sign In

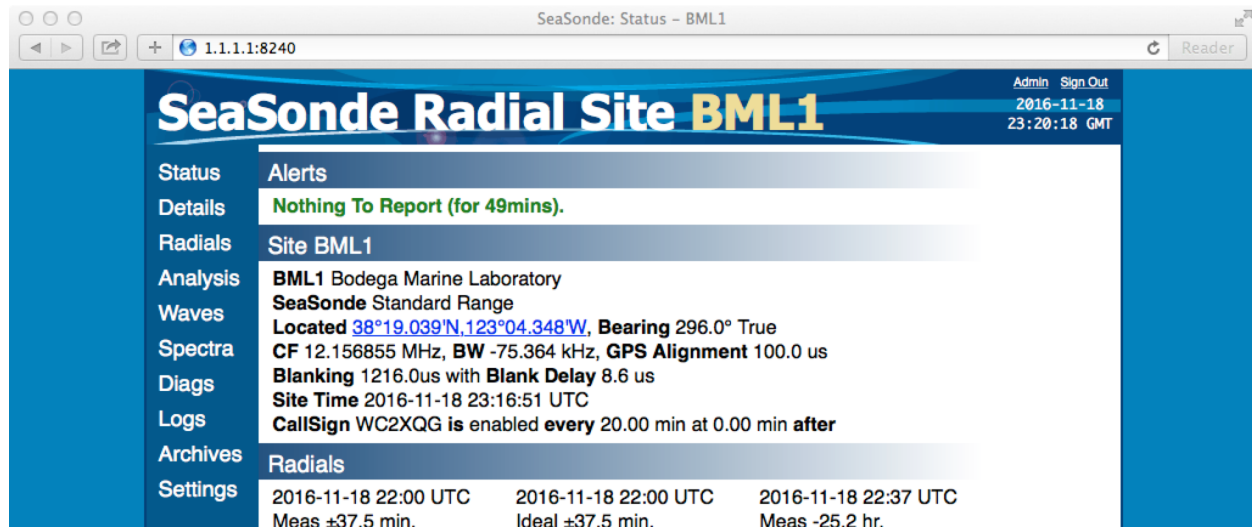
Reader

If you don't see the Login View. and get a timeout page instead, then you will need to troubleshoot the problem. Possible problems are: You're not connected to the internet. IP is incorrect. Port number is incorrect. Port number is blocked by firewall. RadialWebServer is not running on the site. The site is not connected/available to the internet. The site is not running.

[Note: The RadialWebServer can also be used on the Radial Site itself. This is done by running Safari and entering "localhost:8240". This should also give you the above login page. This is a convenient way to check the site when physically there.]

Enter your user Name and Password in the edit boxes provided and hit return or click the "Sign In" button. The checkbox "Remember Me" will cause the browser to keep you logged in even if you close the window or exit the browser and return, until you click the logout link (logout link shows in upper right after logging in). The "Remember Me" is useful if you script your browser to automatically open a link to the site. If your Name and Password are not recognized, then a "Invalid email or password." message will appear under the "Sign In" section title.

Once you've entered a valid name and password, you will see the **Status View** page. On top is a "SeaSonde Radial Site" banner followed by site code in light brown. To the right of the site is an Admin link only if your account has administration permission. Next is a Sign Out link which will take you back to the Login view. Underneath "Sign Out" is the date and time at the site. On the left is a vertical menu list of the views.

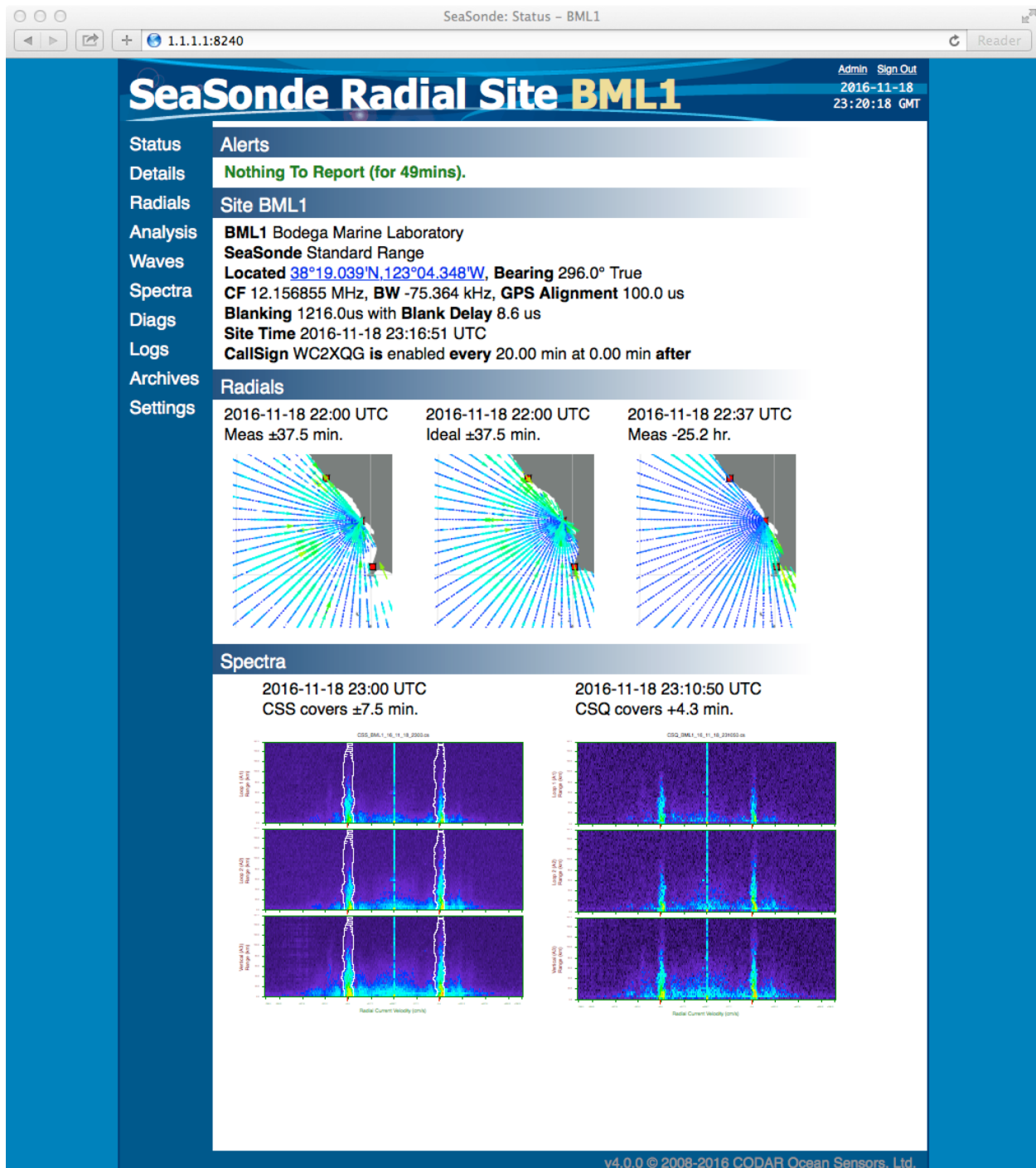


The RadialWebServer is navigable by the list of views on the left side. Click on the word for the desired view. The views are:

- Status – Current status and overview of the site.
- Details – Details about the site's configuration, status, hardware, and data.
- Radials – Plot any radial within last year on the site.
- Analysis – Plot distributions, deviations and averages for radial data.
- Waves – Plot any wave data within last year on the site.
- Spectra – Plot any spectra within last year on the site.
- Diags – Plot the hardware and radial diagnostic files.
- Logs – View critical site logs and create/download a SeaSondeReport file
- Archives – Conveniently download data files from the site.
- Settings – Change the refresh interval and setup the alert email service.

Each view content is typically divided into vertical sections with a white text on fading horizontal banner. Some of these section banners have a triangle next to the title. Clicking on the triangle will hide/show the contents of that section. This is useful to get other sections on the display without having to scroll down.

The **Status View** is designed to give you a quick view of whether the site is working well or not. It is divided into four sections.





The Alerts section is a list of problems with the site. If there are no problems then a “Nothing To Report” message is shown.

The Site XXXX section shows information about the site and how it’s configured. If you click on the Located link you will get a new window with Google® map of where the site is located. The last line Site Time is the time at the site when this information was gathered. The Status View is trigger to update every few minutes depending on Settings.

The Radials section shows thumbnails of the last radial vectors for both Measured and Ideal patterns plus a 25hr averaged radial for the site. If you don’t have Measured pattern then these will all show Ideal. If you click on one of these plots you will get a full size plot.

The Spectra section shows the last CSS and CSQ cross spectra power map. A quick look at these with a little training can tell you much on how well the site is working.

If you click on the radial or spectra thumbnail plots you will get a full size plot. You will then need to click the browser’s back arrow or the Status link to get back to this Status View.

The **Details View** shows sections with detailed information about the Site, Alerts, Receiver, Transmitter, Data Files, Processor, and SeaSonde Applications running. Some of the useful information here is receiver firmware, hardware temperature, transmit power, disk space available, and application versions.

The screenshot shows a web browser window with the address bar displaying "1.1.1.1:8240/reports". The page title is "SeaSonde: Details - BML1". The main content area is titled "SeaSonde Radial Site BML1" and includes a navigation menu on the left with options: Status, Details, Radials, Analysis, Waves, Spectra, Diags, Logs, Archives, and Settings. The right side of the page displays various status and configuration details.

**Status** Site

**Details** BML1 Bodega Marine Laboratory  
SeaSonde Standard Range

**Radials** Located [38°19.039'N, 123°04.348'W](#), Bearing 296.0° True

**Analysis** CF 12.156855 MHz, BW -75.364 kHz, GPS Alignment 100.0 us

**Waves** Blanking 1216.0us with Blank Delay 8.6 us

**Spectra** Site Time 2016-11-21 17:32:47 UTC  
CallSign WC2XQG is enabled every 20.00 min at 0.00 min after

**Diags** Alerts

**Logs** Nothing To Report (for 17hours 19mins).

**Archives** Receiver

**Settings** SeaSonde Receiver-SSRX-USB-AWGIII-02002063  
CODAR Advanced Waveform Generator III  
Firmware Version 3.22T Apr 25, 2016 [TSIP] Timing 633D Acquisition 9301  
Running for 6 days 1 hour 41 minutes and 9.9 seconds  
Chassis Temperature is 29.0 °C  
Humidity 32% with a Dewpoint of 0.7°C  
Power Supplies are good at +5.1V, -5.0V and +12.2V

**Transmitter**

Power 58 Watts Forward, 2 Watts Reflected, VSWR 1.4:1  
Chassis Temperature 27.0 °C  
Amplifier Temperature 32.0 °C  
Power Supplies are good at +5.1V and +24.0V

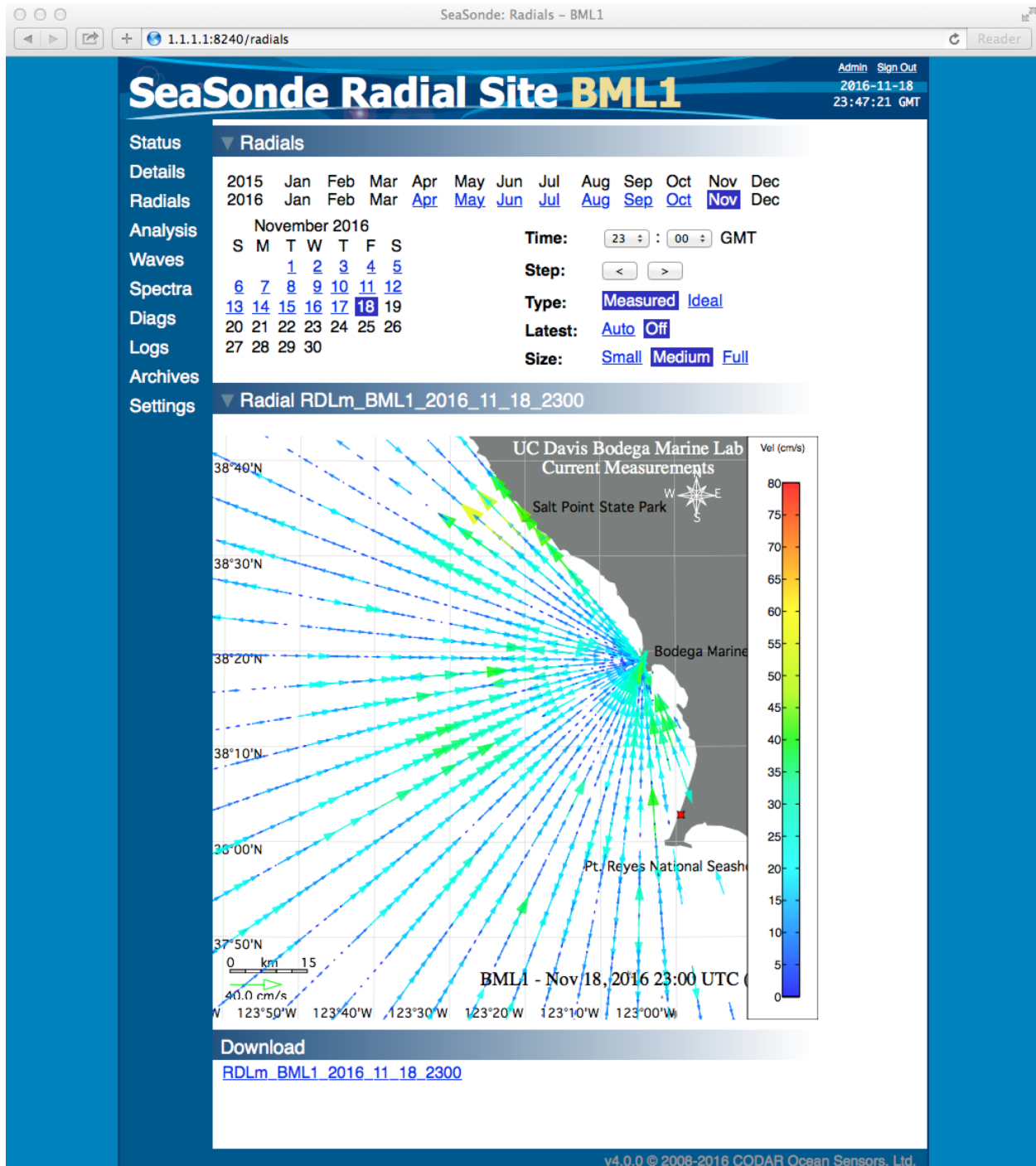
**Data**

Logging Range Series with 80 ranges by 512 sweeps.  
Logging CrossSpectra #1 with 80 ranges by 512 dopplers  
Logging CrossSpectra #2 with 80 ranges by 512 dopplers at 2.0x rate  
49 CSQ Spectra Processed, 0 Unprocessed.  
Latest is "CSQ\_BML1\_16\_11\_21\_172513.cs".  
289 CSS Spectra Processed, 0 Unprocessed.  
Latest is "CSS\_BML1\_16\_11\_21\_1720.cs".  
169 Ideal Pattern Radial files.  
Latest is "RDLi\_BML1\_2016\_11\_21\_1600.ruv", 2050 vectors.  
169 Measured Pattern Radial files.  
Latest is "RDLm\_BML1\_2016\_11\_21\_1600.ruv", 1321 vectors.  
3 Wave files.  
Latest is "WVLM\_BML1\_2016\_11\_01\_0000.wls", 2974 Entries.  
Latest Entry is 2016-11-21 16:30 UTC

**Processor**

Mac mini, Intel Core i5, 2.6 GHz, 8 GB  
Serial number C07NV6PKG1HW  
Operating System is OS X 10.11.6 (15G1004)  
Running for 17 hours 34 minutes and 31.7 seconds  
Now drawing from 'AC Power'  
There are 204 processes running  
Boot Volume has 565.55 GB available out of 999.35 GB [57% avail.]  
Volume "CodarArchives" has 45.12 GB available out of 119.90 GB [38% avail.]  
Volume "CodarArchives2" has 681.29 GB available out of 999.86 GB [68% avail.]

The **Radials View** allows you to plot and download radials on the site.



The first section shows and controls the radial to plot and optionally download. Only the months with blue text and underlined contain any radials files during that month. Click on any of the blue months to select that month. The selected month is shown white text on blue and a calendar of the days for that month are shown. Each day that has at least one radial is shown in blue text with an underline. Click a blue day to select that day. The selected day will be shown in white on blue.

Next to the month calendar is the control Time: hour & minute pop up menus. The hour will only contain hours for which one or more radial files exist for the current day. The minute one to the right contain a list of minutes after the hour selected for which a radial exist. Alternately, you can use the Step: arrows to step back and forward in time to plot each existing radial.

The Type: Measured Ideal control allows you to select either. The selected type is shown white on blue. If the selected type does not exist, you will get a “No Matching Radials” instead of a plot below.

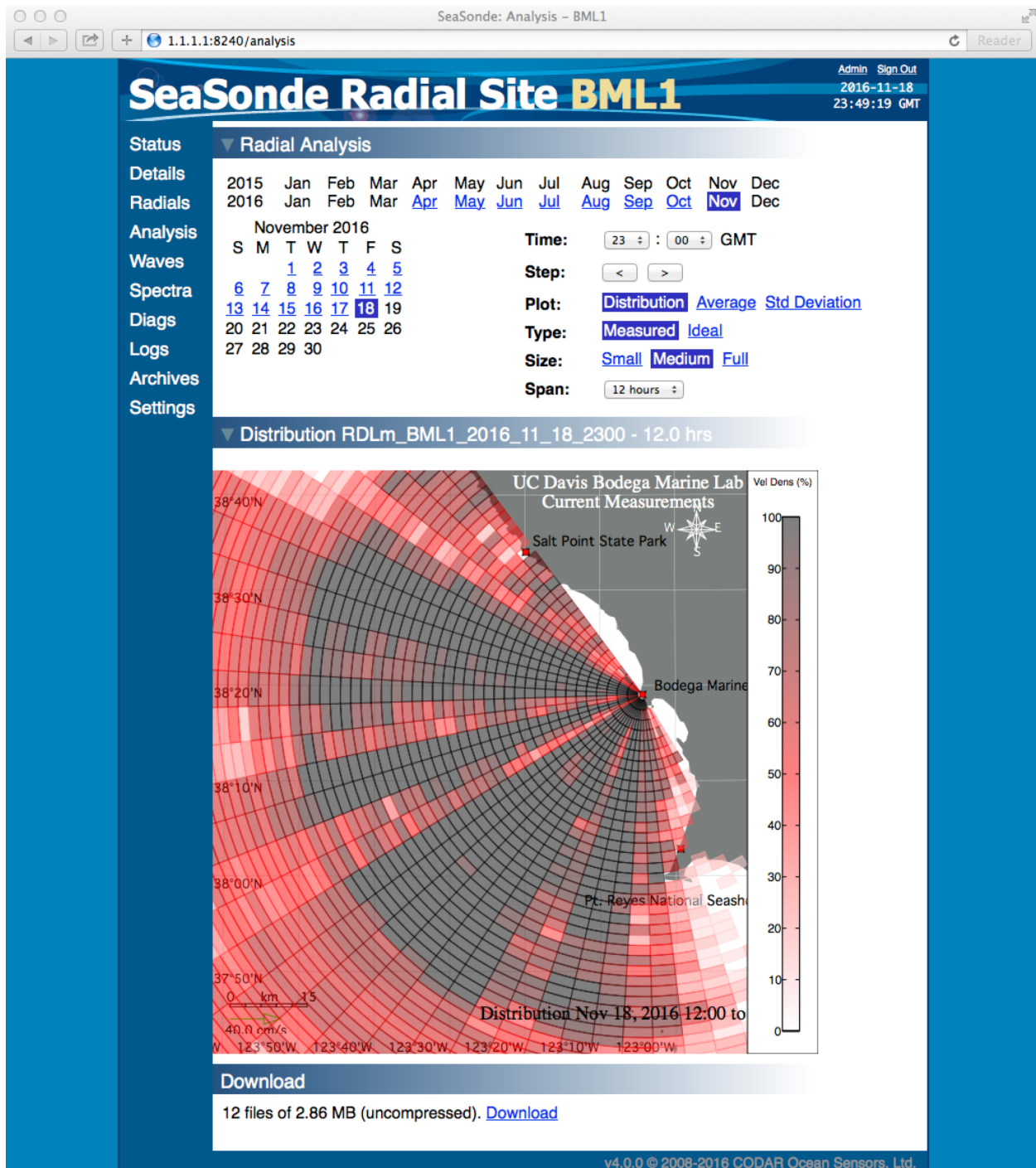
The Latest: Auto Off control, if set to auto, will automatically update to show the latest radial. This is useful if you want to leave this view up to see each new radial as it is generated.

The second section is the radial plot. The radial's filename is shown in the section header. If you drag this image to the desktop or save image it's filename will be rad-XXXX-yyyy-mm-dd-hhmm-rd.

The third section is a link which will download the original radial file, if clicked.

Notice the triangles next to the section titles “Radials” and “Radial RDLm”. These disclosure triangles if clicked on will collapse the section so that it is hidden. This is useful if you want to set the Latest: to Auto and then collapse the control section so only the plot shows. It is also useful, you want to download a series of files, by collapsing just the plot so that the download link is close to the control section.

The **Analysis View** allows you to plot statistical radial plots including averages, density distributions, and radial velocity standard deviations.



The first section shows and controls what set of radial data will be plotted or collected for download. Setting the date and time will pick the last file of the data set.

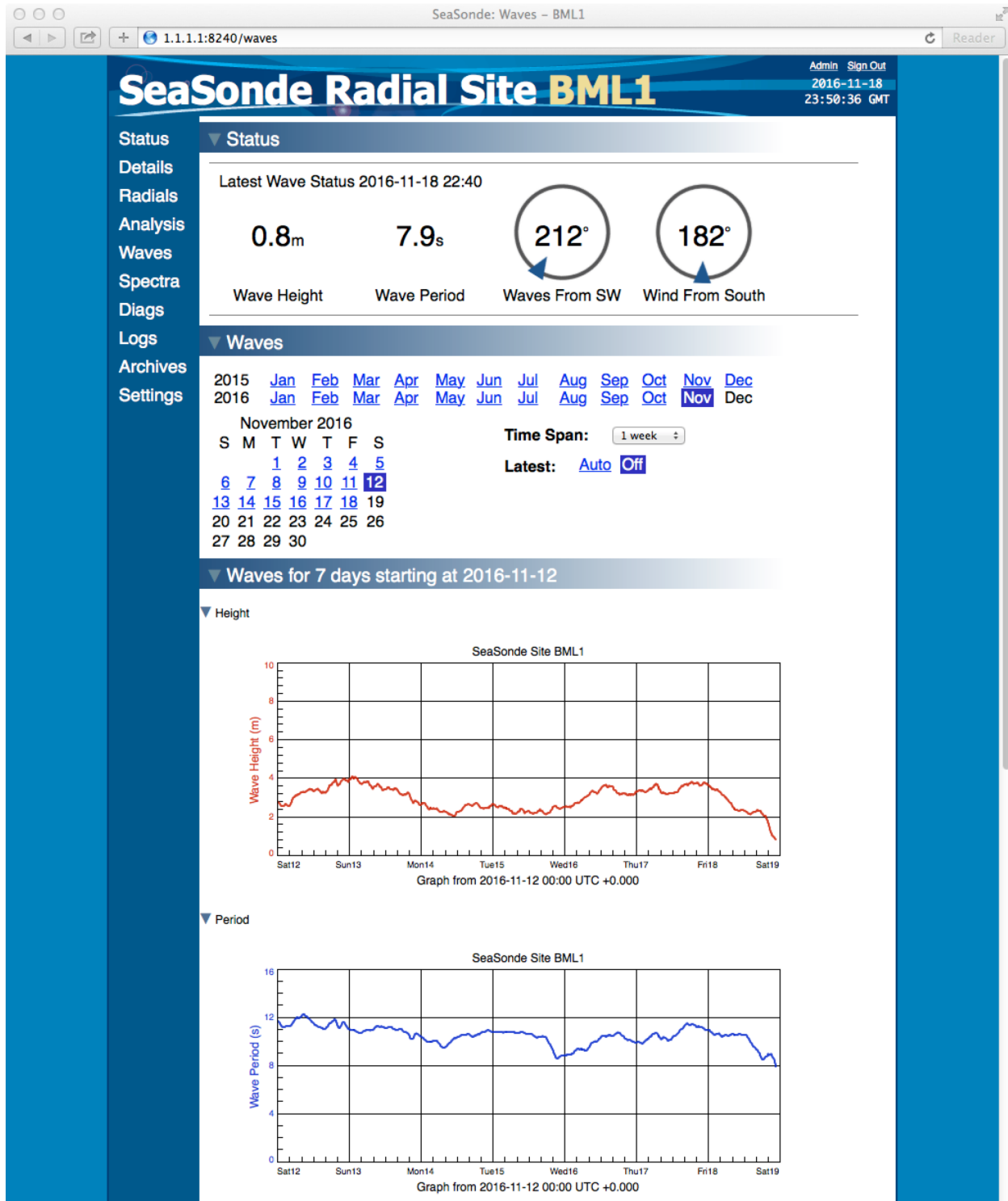
The Plot: control determines what statistical analysis plot will be generated. Distribution will show the data density with darker areas indicating consistent presence of radial vectors and lighter areas where radial vectors only appear infrequently.

The Span: control sets the amount of radial data included in the plot. A 12 hour span will include the selected file and all files within 12 hours preceding it. Note that large time spans may take a long time to process and will load more slowly.

The second section will show the current analysis plot. The name in the header is based off of the selected file and the selected time span.

The third section is a link that will download a compressed archive of all radial files used to create the current plot.

The **Waves View** can plot wave history data from the site.





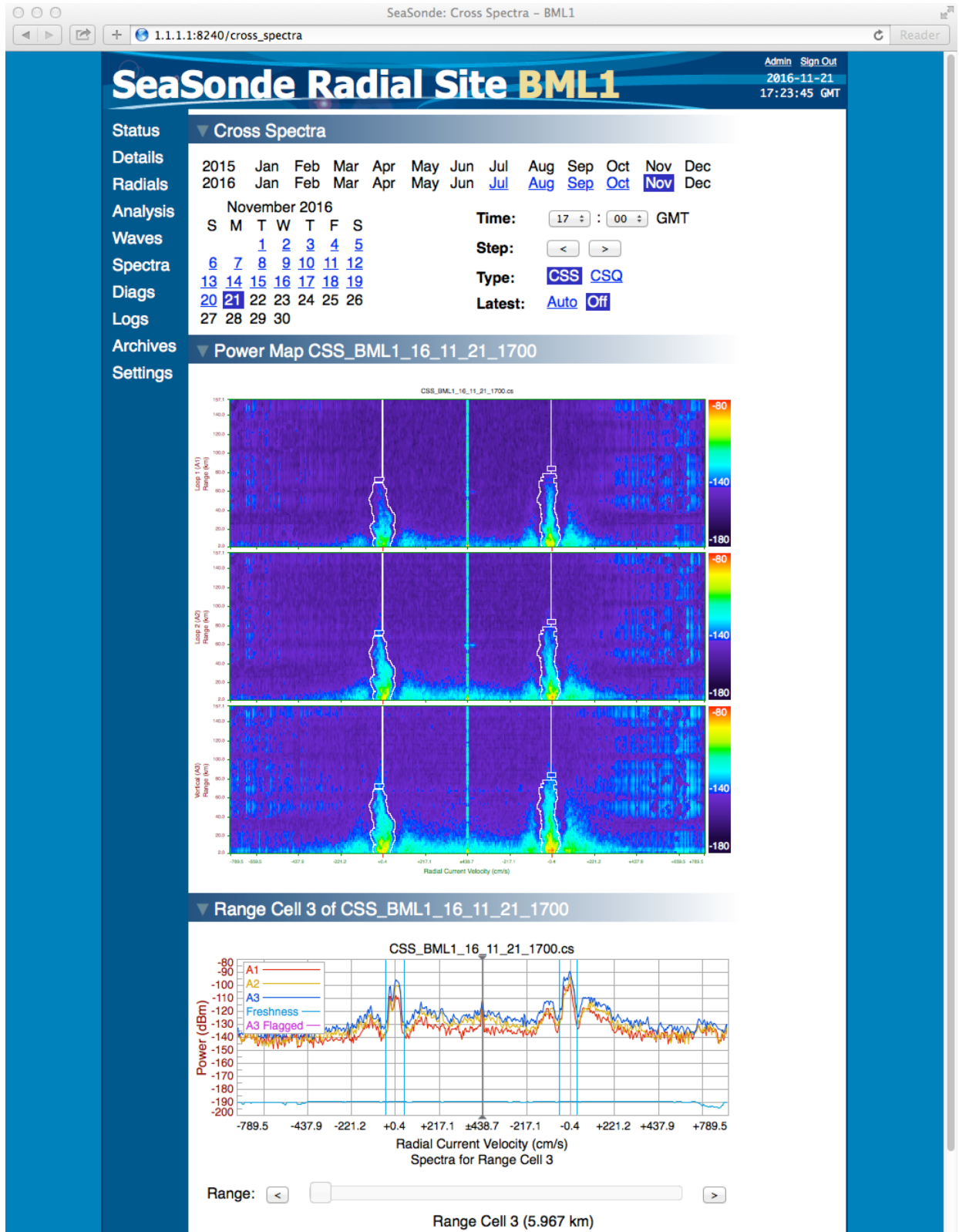
The Status section displays easily accessible data on the current conditions at the site, with the most recent measured values for wave height, wave period, wave direction, and wind direction. If there is no recent data available, the corresponding error will show here.

The Waves section sets the start time to plot and a Time Span: popup. The Latest: Auto Off control if set to Auto will periodically refresh the page with the latest wave data over the specified Time Span.

The Wave plot section contains four plots for the average wave height, wave period, wave direction, and wind direction over time. Note that each wave plot can be hidden by clicking on the triangle next to titled sub section for each plot. Each of these plots can be dragged to the desktop or saved with their filename is wave-XXXX-yyyy-mm-dd-timespan-# where timespan is the time span in days (i.e. '7d') and # is the plot number from 1 to 4.

The Download section shows one or two waves files for the current time. Since Wave files are monthly, the current month and the previous month might be shown here. Clicking on the link will download the wave file.

The **Spectra View** can plot spectra data from the site. With normal settings, the site usually only stores a few months of data.



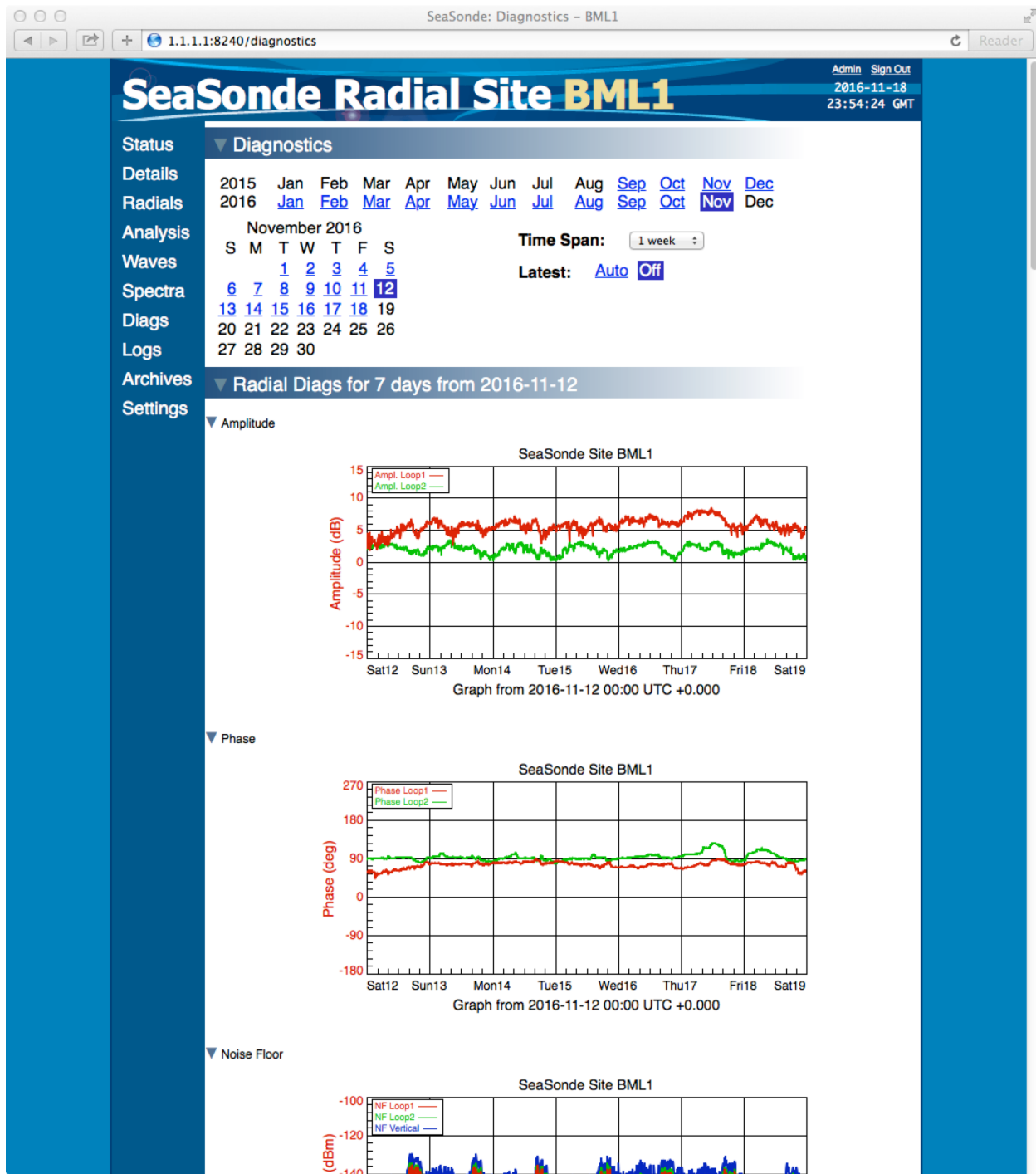
The Cross Spectra section selects the spectra time to plot. The control Type: CSS CSQ switches between the averaged CSS spectra and the more raw CSQ spectra. The control Latest: Auto Off if set to Auto will periodically refresh the page with the latest spectra on the site.

The first plot section is a power map which show the power returned as color intensity across all doppler and range cells for the three cross loop antennas. This is a useful way to diagnose antenna problems, noise/interferences problems and other issues.

The second plot section is a single range slice of power versus doppler. The slider and arrow controls here lets you pick which range cell to look at. The arrows are single step controls.

The Download section shows the current cross spectra. Clicking the link will download a reduced cross spectra file. The reduced cross spectra is a special variation of the standard cross spectra files which is compressed about 3:1. The utility SpectraShortener can expand this file to a standard cross spectra format. SpectraPlotterMap can plot this reduced format. AnalyzeSpectra can process this reduced format.

The **Diags View** can plot the diagnostics history of the hardware and radial status diagnostic logs.

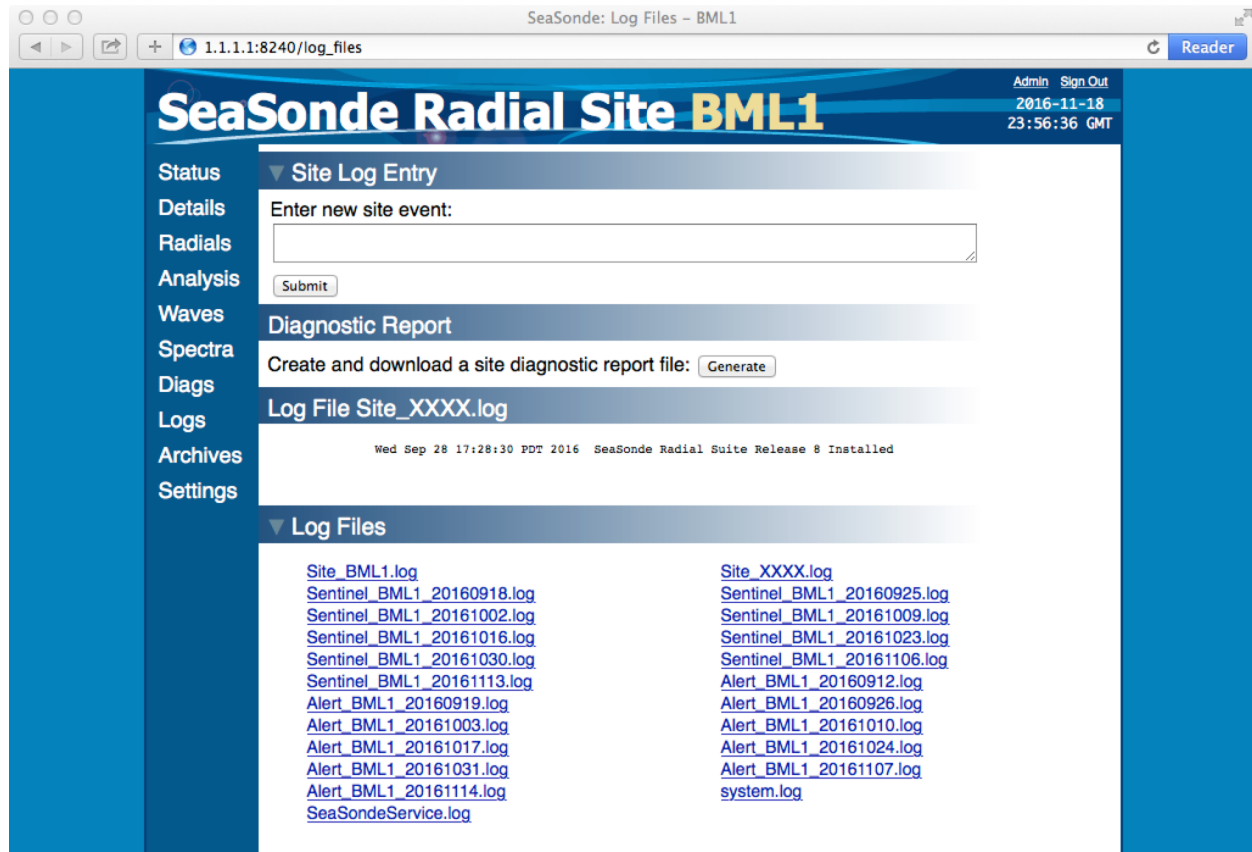


The Diagnostics section contains controls to set the start date for diagnostic data plots. The Time Span control determines how many days or weeks of data to include from the start date. The control Latest: Auto Off, if set to Auto, will periodically refresh the page with the latest diagnostic data over the specified Time Span.

Next is a radial diagnostic section containing 10 different plots followed by a hardware section containing 7 plots. Each section as well as each plot has a disclosure triangle which allows control over which plots are shown.

The Download section shows one to four diagnostics files for the current time. The radial diagnostics end in .rdt while the hardware diagnostics end in .hdt. Since diagnostics files are weekly, the current week and the previous week might be shown here. Clicking on the link will download the diagnostic file.

The **Logs View** shows a list of system and SeaSonde logs for the site as well as letting the web user enter notes into a site log and generate/download a SeaSonde Report file.



If you notice a new problem with the site or have changed the site hardware or software in some way, you should type that change or problem into the Site Log Entry section and click submit. This entry will be time stamped and tagged with your web user name and append to the Site\_XXXX.log file where XXXX is the site code.

By default the site log is shown in the Log File section. To view other log files, select from the following Log Files section. Note, if the log file is very long, you will not see all of it here.

The Diagnostic Report section allows you to generate and download a SeaSonde Report file which can greatly help CODAR support personnel diagnostic problems. Clicking the Generate button will take up to a minute before your browser will start downloading a RPT\_XXXX\_yyyymmdd\_hhmm\_web.zip. This file will be 2MB to 5MB in size, so it might take a while depending on your connection speed.

The **Archives View** allows convenient downloading of many different data files from the radial site.

The screenshot shows a web browser window with the address bar displaying "1.1.1.1:8240/archives/radials". The page title is "SeaSonde Radial Site BML1". In the top right corner, there are links for "Admin" and "Sign Out", along with the date "2016-11-18" and time "23:58:12 GMT".

On the left side, there is a vertical navigation menu with the following items: Status, Details, Radials, Analysis, Waves, Spectra, Diags, Logs, Archives, and Settings. The "Archives" item is currently selected.

The main content area is titled "Download File Archive". Under "Archive Type:", there are several links: Radials, Time Series, Range Series, Spectra, Waves, Diagnostics, Tsunami Detections, and Radial Configs. The "Radials" link is highlighted.

Below this, the section "Choose the Starting File and Duration:" contains a calendar for November 2016. The calendar shows days of the week (S M T W T F S) and dates (1 through 30). The date "16" is highlighted. To the right of the calendar, there are input fields for "Time:" (00 : 00 GMT), "Step:" (< >), "Kind:" (Final Short-time), "Pattern:" (Measured Ideal), and "Duration:" (1 day).

Below the calendar and input fields, it says "Selecting 24 files of 5.9 MB (uncompressed)." followed by a "Download" link.

A list of 24 files is displayed, each starting with "RDLm\_BML1\_2016\_11\_16\_" followed by a time in HHMM format (0000, 0100, 0200, 0300, 0400, 0500, 0600, 0700, 0800, 0900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300). Each file name is preceded by a bullet point.

At the bottom of the page, there is a footer that reads "v4.0.0 © 2008-2016 CODAR Ocean Sensors, Ltd."

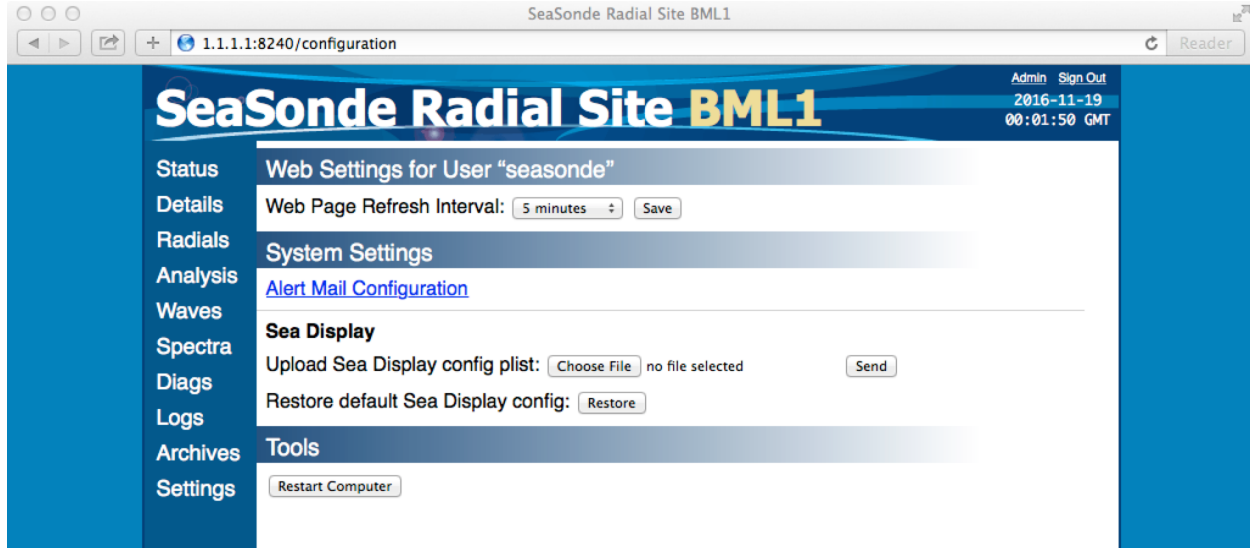


The Archive Type section contains selections for the type of data you want to download. The Radial Configs selection will allow you to download the entire folder in a compressed zip file. Radials, Range Series, Spectra, Waves, and Diagnostics are available to select if present on the site. Elliptical data and Tsunami Detection data are also available here if those additions are installed on the site.

The control section allows you to choose the range of data to download. It will start with the selected date and time, and include all files through the selected duration.

Selected files are shown below along with the number and size of the data. Clicking the download link highlighted in blue will compress and download the selected files as a zipped folder.

The **Settings View** is used to control settings for the RadialWebServer and the emailing of alerts.



The “System Settings” section will only show for admin users. The Web Settings contains options relevant to the Radial Web Server user. The refresh interval controls the update rate of data view such as Radials, Waves, Spectra, and Diagnostics when the Latest: Auto mode is on.

System Settings include alert main configuration, and Sea Display map settings. On a site, the Sea Display settings are contained in the RadialWebConfigs folder in a file with the name RadialDisplayTool.plist. For advanced users who have a specific set of preferred display settings, they can upload their own settings file here with the Choose File and Send buttons. There is also an option to restore the default RadialDisplayTool settings. These will affect the visual output of the Radial and Analysis views on the Radial Web Server.

On the site a tool call RadialSiteReporter generates the site alerts and optionally emails them. See RadialSiteReporter document for detailed information on what it does. Clicking the Alert Mail Configuration link allows an **admin** user to configure whom such alert emails are sent to.

The screenshot shows a web browser window with the URL `1.1.1.1:8240/configuration/email_configs`. The page title is "SeaSonde Radial Site BML1". The left sidebar contains a menu with links: Status, Details, Radials, Analysis, Waves, Spectra, Diags, Logs, Archives, and Settings. The main content area is titled "Alert Mail Configuration". It displays a table with columns: Addresses, Enabled, Send Alert Changes, Send Periodic Report, and Schedule. The table contains three rows of email addresses with their respective settings. Each row has "Edit" and "Remove" links. A "Create New" link is located below the table. The top right corner shows the user is logged in as "Admin" and the date/time is "2016-11-19 00:04:05 GMT".

Addresses	Enabled	Send Alert Changes	Send Periodic Report	Schedule	
you@yourdomain.com	No	No	No		<a href="#">Edit</a> <a href="#">Remove</a>
example1@codar.com	Yes	Yes	Yes	weekly	<a href="#">Edit</a> <a href="#">Remove</a>
example2@codar.com	Yes	No	Yes	daily	<a href="#">Edit</a> <a href="#">Remove</a>

[Create New](#)

Create New link will add a new email address to the list. Remove link will delete the email address. Create New and Edit link will open a new view to edit the settings for one address.

The screenshot shows a web browser window with the URL `1.1.1.1:8240/configuration/email_configs/new`. The page title is "SeaSonde Radial Site BML1". The left sidebar contains a menu with links: Status, Details, Radials, Analysis, Waves, Spectra, Diags, Logs, Archives, and Settings. The main content area is titled "New Email". It contains a form with the following fields: "Addresses:" (a text input field), "Enabled:" (a checked checkbox), "Send Alert Changes:" (a checked checkbox), "Send Periodic Report:" (a checked checkbox), and "Schedule:" (a dropdown menu set to "Weekly"). There is a "Create" button and a "Back" link. The top right corner shows the user is logged in as "Admin" and the date/time is "2016-11-19 00:05:04 GMT".

Addresses:

Enabled: ☒

Send Alert Changes: ☒

Send Periodic Report: ☒

Schedule: Weekly

[Back](#)

Addresses: must be one or more valid email addresses. If more than one, they should be separated by commas. **Please, do not abuse this feature; do NOT send alert emails to an unsolicited address or to codar.com.**

Enabled: If check-marked enables sending email to the Addresses.

Send Alert Changes: When check-marked along with Enabled will cause RadialSiteReporter to send an email to Addresses: whenever an alert is tripped or cleared.

Send Periodic Report: When check-marked along with Enabled will send out the Site info plus the Alert logs periodically selected by the Schedule: popup. (Currently, this feature is not available.)

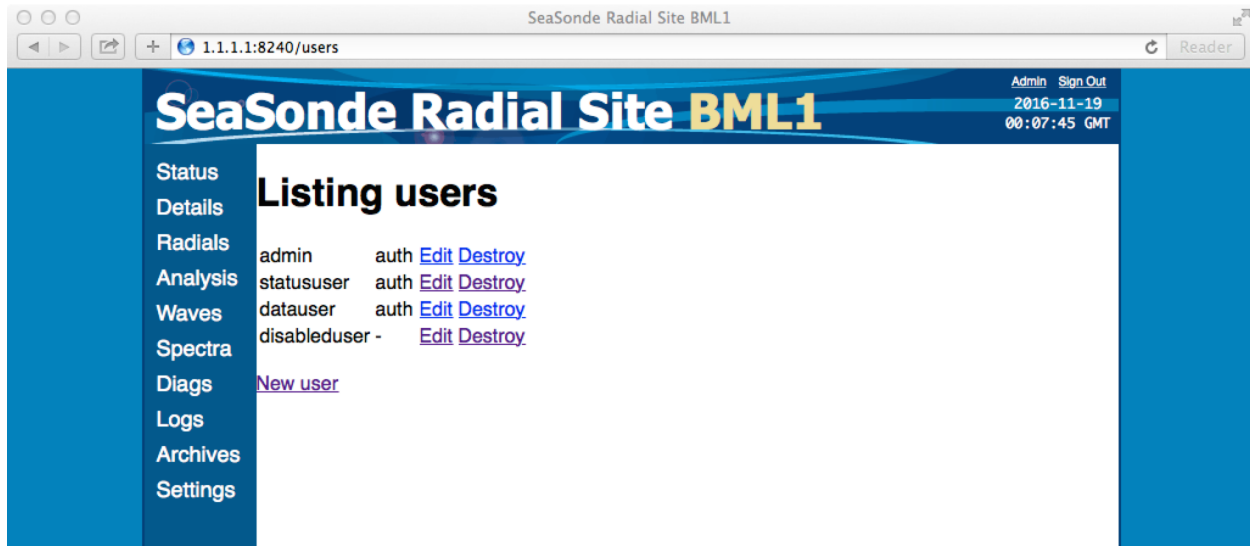
Here is an example email:

**From:** codar@SeaSondeSite-XXXX.local  
**Date:** March 30, 2009 12:14:24 AM PDT  
**Subject:** [SeaSonde] TEST Alerts [TxNotFound,CSSNoBragg,CSQNoBragg]  
**To:** you@yourisp.com

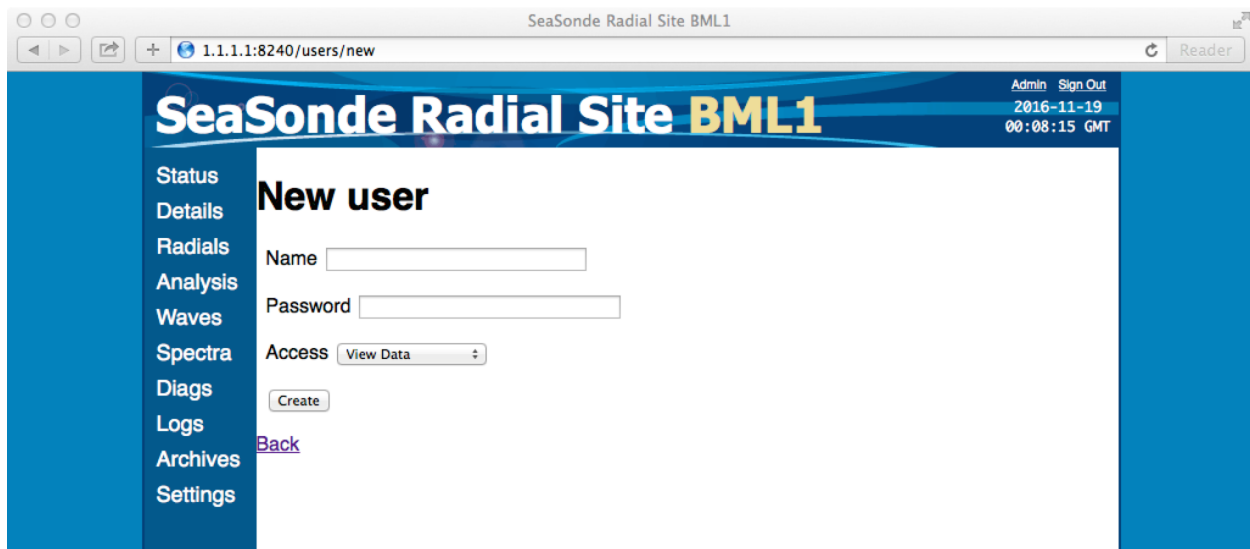
**2009-03-26 13:14 UTC-7 Failure: Transmitter Not Found.**  
**2009-03-26 13:14 UTC-7 Failure: CSS has No Bragg.**  
**2009-03-26 13:14 UTC-7 Failure: CSQ has No Bragg.**  
**2009-03-26 13:14 UTC-7 Failure: Radial Contains No Vectors.**  
**2009-03-27 18:53 UTC-7 Failure: Radial is Not Up-to-Date.**  
**2009-03-30 00:14 UTC-7 Success: Computer is Running.**

Read the **RadialSiteReporter** document on how to customize Alerts and Technical detail on what it might take in order for the site to successfully send out email because most internet service provider are very picky in order to prevent spammers.

The **Admin** view is only available if you have admin rights, then you can click on the link in the upper right corner of the browser window. This will take you to the admin view which will list all the users for the site.



Enabled users will have 'auth' (short for authorized) while disabled users will show '-'. Click [Edit](#) link to edit the user, click [Destroy](#) to delete the user permanently or click [New user](#) link to add a new user.



Beware that names and password are case sensitive, so 'Admin' and 'admin' are not the same. There are three possible kinds of users based on their Access:

Site Management – is an administrative user which has permission to add/remove/edit users. Note, you will be unable to remove the first admin user. If you try you will see a “Cannot delete admin user.” message. You can remove all users by reinstalling the RadialWebServer; the installer has an option to rebuild the user account database and will create a new first admin user.

View Data – is a user who can see Status, Details, Radials, Waves, Spectra, Diags, Logs, and Refresh Settings. This user cannot view or edit the other users and will not see the Admin link.

View Status – is a user limited to Status, Details, and Refresh Settings. Clicking the other views will jump to the login view. This user also cannot view or edit the other users and will not see the Admin link.

Read the **RadialWebServerAdmin** document on how to install RadialWebServer. This document discusses selecting the port number and initial admin account.

## **Revision History**

First Draft      Nov 21, 2016

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