PropView 1.9.3

PropView uses the IonCap propagation prediction engine to forecast the minimum and maximum useable frequencies between two locations over a specified 24 hour period. Results are rendered in an easy-to-understand color-graphic display. You can specify locations via direct latitude/longitude entry. Alternatively, PropView interoperates with DXView (version 1.5.1 or later) to allow location selection via DXCC prefix entry or by clicking on locations on a world map.

PropView can assess actual propagation by monitoring beacons in the NCDXF/IARU Network, either by band, by location, or by bearing from your QTH. When Commander (version 3.7.3 or later) is running, PropView can automatically QSY your radio to the current beacon's frequency. When DXView is running, PropView can display the current beacon location on DXView's world map and rotate your antenna to the appropriate bearing.

Prerequisites

To use PropView, you need
- a PC running Windows 2000, Windows NT, Windows XP, Windows 7, Windows 8, or Windows 10
- a monitor with SVGA or better resolution

Download and Installation

Installing or Upgrading the DXLab Launcher
The **DXLab Launcher** automates the installation of new DXLab applications, including PropView, and the upgrading of already-installed DXLab applications.

If you're an aspiring DXLab user who has **not installed any DXlab applications** on your PC, or if you're a long-time DXLab user who has **never installed the Launcher**, then installing the Launcher will make it easy to install new DXLab applications and keep them up to date as upgrades are released.

Step-by-step guides for installing the Launcher are available, both in HTML for browsing (http://www.dxlabsuite.com/dxlabwiki/InstallLauncher) and in PDF for printing (http://www.dxlabsuite.com/Download%20and%20Installation.pdf).

You can uninstall PropView by running the Add/Remove Programs applet on the Windows control panel.

If you have questions or suggestions, please post them on the DXLab reflector at http://groups.yahoo.com/group/dxlab.

If you're not a member, you can sign up at http://www.dxlabsuite.com/reflector.htm.

Configuration

PropView's Configuration window provides **General** and **Prediction** tabs.

General tab
If the **Display information in title bars** box is checked, PropView displays status information in window title bars.

If the **Use multiple monitors** box is checked, PropView windows that resided on a secondary monitor during the previous session will be restored to the same secondary monitor on startup; when not checked, all windows are restored to the primary monitor on startup
Checking the **Log Debugging Info** box directs PropView to record diagnostic information into the file `errorlog.txt` in PropView's folder.

The **Distance Units** panel determines whether distances are displayed in miles or kilometers.
The **Guidance panel** controls the action of explanatory popup windows and specifies the web browser use to display online documentation:

show control explanations	when checked, explanatory information appears in a small popup window when the mouse cursor lingers over a textbox, button, checkbox, display pane, or setting.
Browser pathname	if this setting is blank, PropView displays online documentation using your PC's default web browser; if this setting contains the pathname of an web browser, PropView displays online help using that web browser.

Clicking the **Display Errorlog** button displays diagnostic information into the file `errorlog.txt` in PropView's folder.

Clicking the **Display License** button displays PropView's License.

Prediction Tab
Frequency-dependent Settings
The **Frequency-dependent Settings** panel specifies a **Takeoff Angle** and RF output **Power** for each amateur band. When this panel's **Enable** box is checked and Commander is running, PropView will ignore the Takeoff and Power settings specified on the Main window's Parameters tab and instead use the values specified in this panel for the transceiver's current band.

The mapping from frequencies to bands is established by a band definition file. At startup, PropView checks its folder for the file `Bands.txt` ; if found, the contents of this file are interpreted as user-defined band definitions in the format shown below. If `Bands.txt` is not found, then PropView checks its folder for the file `DefaultBands.txt`, which is included with each release of PropView and contains:
```
160M, 1.800, 2.000
80M, 3.500,4.000
60M, 5.3305,5.405
40M, 7.000,7.350
30M, 10.100, 10.150
20M, 14.000, 14.350
17M, 18.068, 18.168
15M, 21.000, 21.450
12M, 24.890, 24.990
10M, 28.000, 29.900
6M, 50.000, 54.000
```

Each line in a band definition file contains three parameters, separated by commas: the band name, the band's lower edge in megahertz, and the band's upper edge in megahertz.

- each band's lower band edge must be less than its upper band edge
- the upper band edge defined on one line must be less than the lower band edge defined on the next line

User-defined band specifications can alter default frequency ranges, but cannot introduce new bands

Mode-dependent Settings

The **Mode-dependent Settings** panel specifies the Required SNR (Signal-to-Noise Ratio) for each of several popular modes, thereby making it easy to specify the Required SNR by selecting the mode to be used. Each mode's **Required SNR** is specified in decibels, in the range of -30 to 99. Default values are

Mode	Required SNR
FT8, JT65, JT9	0
CW, RTTY, PSK31, PSK63, PSK125, Olivia	10
SSB, AM, FM, SSTV	20

Prediction URLs

The Predicted Sunspot Numbers box specifies the URL from which PropView obtains the current SSN (Smoothed Sunspot Number) .

- Clicking the **Def** button to its right resets the URL to its default setting
- Clicking the **Go** button to its right directs the specified web browser to navigate to this URL.

The Current Solar and Geomagnetic Conditions box specifies the URL from which the current SFI (Solar Flux Index) and Geomagnetic K-index are obtained.

- Clicking the **Def** button to its right resets the URL to its default setting
- Clicking the **Go** button to its right directs the specified web browser to navigate to this URL.

The Predicted SFI and A-index box specifies the URL from which the predicted SFI (Solar Flux Index) and Geomagnetic A-index are obtained.

- Clicking the **Def** button to its right resets the URL to its default setting
- Clicking the **Go** button to its right directs the specified web browser to navigate to this URL.

Forecasting Engine

PropView includes three different HF propagation forecasting engines for generating propagation forecasts: *IONCAP*, *ICEPAC*, or *VOACAP;* the *IONCAP* engine is not available when PropView is running on a 64-bit version of Windows. All three engines can generate predictions using the *LUF & MUF* technique, which forecasts the Lowest Usable Frequency (LUF) and Maximum Usable Frequency (MUF) at each hour of the specified UTC day. The *VOACAP* engine can alternatively generate predictions using the *SNR & Prob* technique, which forecasts the Signal-to-Noise Ratio (SNR) and the fraction of days of the month on which the specified Required SNR will be achieved for each band at each hour of the specified UTC day.

The **Forecasting Engine** panel specifies which engine and technique is used to generate propagation forecasts.

Forecasting Propagation

PropView uses the selected forecasting engine and technique to predict band openings between your station and a DX stations over the course of a specified UTC day. This prediction is driven by settings that you enter in the **Conditions**, **Your Station**, **DX Station**, **Prediction Direction**, and **Prediction Path** panels on the **Parameters** tab of PropView's Main window. The resulting prediction is graphically displayed on the **Prediction** tab of PropView's Main window.

Conditions panel

Date	the day for which a forecast is to be generated, in the format dd-mmm-yyyy - double-clicking on this textbox enters the current UTC date - if the Show Current Time box is checked, the date will automatically be kept current
SFI	the current solar flux index - broadcast by WWV at 18 minutes after each hour - available via N6RT's propagation page - automatically provided by SpotCollector (if running) - clicking the **U** button to its right will update the SFI and K-index from the Current Solar and Geomagnetic Conditions URL (if accessible)
SSN	the current smoothed sunspot number - provides a more accurate basis for prediction than the current solar flux index, and thus if specified will be used in preference to the current solar flux index - updated from the Predicted Sunspot Numbers URL at startup - clicking the **U** button to its right will update the SSN from the Predicted Sunspot Numbers URL
K-index	the geomagnetic K-index - broadcast by WWV at 18 minutes after each hour - available via N6RT's propagation page - automatically provided by SpotCollector (if running) - clicking the **U** button to its right will update the SFI and K-index from the Current Solar and Geomagnetic Conditions URL (if accessible)
Avail %	the required circuit reliability, expressed as a percentage representing the likelihood that signal quality will be acceptable, in the range of 1 to 99
SNR	the required Signal-to-Noise Ratio, expressed in decibels, in the range of -30 to 99
Mode	selecting a mode sets the SNR to the **Required SNR** specified for the mode in the Mode-dependent Settings panel

Your Station panel

Latitude	specify the latitude component of your station's location, in standard geographic format - an invalid Latitude will be highlighted in red font - if DXView is installed, PropView sets this component to your QTH latitude - strike the Enter key to update your station's Grid Square

Longitude	specify the longitude component of your station's location, in standard geographic format
	• an invalid Longitude will be highlighted in red font
	• if DXView is installed, PropView sets this component to your QTH longitude
	• strike the Enter key to update your station's Grid Square
Grid Square	optionally set your station's Latitude and Longitude by specifying a Grid Square and striking the Enter key
	• an invalid Grid Square will be highlighted in red font
TakeOff	your transmit antenna's minimum takeoff angle, in degrees (disabled when **From the DX Station** is selected)
Power	your transmitter output power, in watts (disabled when **From the DX Station** is selected)is selected)
Man-made noise level	specifies the level of RF noise in your location (disabled when **To the DX Station** is selected)

DX Station panel

Latitude	specify the latitude component of the DX station's location, in standard geographic format
	• an invalid Latitude will be highlighted in red font
	• strike the Enter key to update the DX station's Grid Square
Longitude	specify the longitude component of the DX station's location, in standard geographic format
	• an invalid Longitude will be highlighted in red font
	• strike the Enter key to update the DX station's Grid Square
Grid Square	optionally set the DX station's Latitude and Longitude by specifying a Grid Square and striking the Enter key
	• an invalid Grid Square will be highlighted in red font
Track DXView Loc	when checked with DXView running, the DX Station's Latitude and Longitude automatically track the selected location in DXView
Power	the DX station's output power, in watts (disabled when **To the DX Station** is selected)
Man-made noise level	specifies the level of RF noise at the DX station's location (disabled when **From the DX Station** is selected)

Prediction Direction panel
- **From the DX Station** - when selected, your ability to copy the DX station's signals is predicted
- **To the DX Station** - when selected, the DX station's ability to copy your signals is predicted

Prediction Path panel
- **Short** - when selected, propagation is predicted via the short path between your station and the DX station
- **Long** - when selected, propagation is predicted via the long path between your station and the DX station

Propagation Web Sites panel
You can populate each box in this panel with a URL that provides timely propagation information; clicking a box's **Go** button directs the specified web browser to display the box's URL.

Solar and Geomagnetic Parameters panel
The buttons on this panel provide access to historical, current, and forecast parameters that influence HF propagation:

History	when clicked, directs SpotCollector to display its 31-day history of Solar and Geomagnetic indices
Current	when clicked, downloads and displays the report from the Current Solar and Geomagnetic Conditions URL (if accessible) and updates the SFI and K-index
Forecast	when clicked, downloads a 31-day forecast for Solar and Geomagnetic indices from the Predicted SFI and A-index URL (if accessible) and displays it graphically

Beacon panel
Clicking the **Monitor** button displays PropView's Beacon Monitor window, which can be used to assess actual propagation by monitoring beacons in the NCDXF/IARU Network.

Generating a Propagation Forecast
To determine where and when you can hear a DX station at a particular location,
1. select the desired Forecasting Engine and technique
2. set the **Prediction Direction** to **From the DX Station**
3. specify settings on the Main window's **Parameters** tabs:
   - In the Conditions panel,
     - specify the UTC **Date** for which the forecast is to be generated (note: double-clicking the Date box will populate it with the current UTC date)
     - update the smoothed sunspot number by clicking the **U** button to the right of the **SSN** box (note: the smoothed sunspot number changes monthly)
     - update the geomagnetic **K-index** by clicking the U button to its right (note: SpotCollector, if running, will automatically update this setting from WWV reports)
     - set the **Avail** box to the desired probability of successful communications (50% produces aggressive forecasts; 90% produces conservative forecasts)
     - specify the required signal-to-noise ratio in the **SNR** box, or use the **Condition** panel's **Mode** selector to set the required signal-to-noise ratio as a function of the mode to be used
   - In the **Your Station** panel,
     - specify your station's **Lat**itude and **Lon**gitude or **Grid Square** (note: these settings will be automatically specified if DXView is running)
     - specify the level of Man-made RF noise at your location
   - In the **DX Station** panel,
     - specify the DX station's **Lat**itude and **Lon**gitude or **Grid Square** (note: if DXView is running and **Track DXView Loc** is enabled, DXView's selected location will be used
     - set the DX station's expected power output
4. Set the Prediction Path panel to **Short** for a prediction of short path propagation, or to **Long** for a prediction of long path propagation
5. Click the **Predict** button

To instead determine when and where a DX station at a particular location can hear your station, set the **Prediction Direction** to **To the DX Station**, specify your station's **TakeOff** angle and **Power** in the **Your Station** panel, and specify the DX station's Man-made RF noise level in the **DX Station** panel. If the Frequency-dependent Settings panel's **Enable** box is checked and Commander is running, PropView will set **TakeOff** and **Power** from the Frequency-dependent Settings as a function of your transceiver's current band.

When you click the **Predict** button, PropView will create the scripts required to drive the selected forecasting engine, and then direct that engine to generate the prediction. When the forecasting engine has completed its computation, PropView will render the generated numeric forecast graphically on its Main windows **Prediction** tab. If the selected forecasting engine is IONCAP (a DOS program), execution can take several minutes on slower machines running some versions of Windows. The identity of the engine used to generate a forecast is displayed in upper-left corner of the Main windows **Prediction** tab, along with the forecast date.

The forecast graphically displayed on the Main window's **Prediction** tab shows time on its horizontal access, and frequency on its vertical access. A frequency scale labeled in MHz is provided along the left margin, and a wavelength scale labeled in meters is provided along the right axis. If a prediction **To the DX Station** was generated for a specific band, a magenta ball appears to the right of the primary transceiver's current band, if that band is present in the forecast. Otherwise, if Commander is running, a magenta ball appears to the right of the primary transceiver's current band, if that band is present in the forecast.

A line of text immediately above the graphical prediction specifies
- *SP* for a short path prediction, or *LP* for a long path
- the Required SNR used to generate the prediction
- "from" if **From the DX Station** was selected; "to" if **To the DX Station** was selected
- the location of the DX station
- the length of the path between your station and the DX station (in miles or kilometers)
- the band whose frequency-dependent settings were used, if **To the DX Station** was selected and if Frequency-dependent Settings were enabled

Below the graphical prediction's time axis, PropView displays two horizontal bars indicating the solar position at your station and at the DX station; in these bars, yellow means "sun is up", black means "sun is down", and grey means "twilight"; to display a **Solar Colors** panel that provides a color key for each of these conditions, check the **Prediction** tab's **Show Color Keys** box.

The brown **Vertical Time Index** line shows the current UTC time, but can be dragged to any time of day; check the **Show Current Time** box to make the **Vertical Time Index** resume tracking the current time, and to automatically update the Date.

If the **Plot Critical Frequencies** box is checked, PropView displays the following frequencies hour-by-hour
- the lowest useable frequency (LUF) in black (not present if VOACAP's SNR & Prob technique was used to generate the forecast)
- the 90%-confidence Maximum Useable Frequency (MUF) in blue
- the 50%-confidence MUF, in green
- the 10%-confidence MUF, in red (not present if VOACAP's SNR & Prob technique was used to generate the forecast)

If the **Show Open Bands** box is checked, PropView displays horizontal lines for each amateur band for which propagation is possible. The width of each line indicates the likelihood that propagation will occur.
For forecasts generated by any forecasting engine's *LUF & MUF* technique,
- if the band is higher in frequency than the LUF, and lower in frequency than the 90%-confidence MUF, then its associated line is 3 pixels in width
- if the band is higher in frequency than the LUF, and higher in frequency than the 90%-confidence MUF, but lower in frequency than the 50%-confidence MUF, then its associated line is 2 pixels in width
- if the band is higher in frequency than the LUF, and higher in frequency than the 50%-confidence MUF, but lower in frequency than the 10%-confidence MUF, then its associated line is 1 pixels in width

For forecasts generated by VOACAP's SNR & Prob technique,

- if the Required SNR is forecast to be achieved on 80% or more of the days of the month, the associated line is 4 pixels in width
- if the Required SNR is forecast to be achieved on more than 60% but less than 80% of the days of the month, its associated line is 3 pixels in width
- if the Required SNR is forecast to be achieved on more than 40% but less than 60% of the days of the month, its associated line is 2 pixels in width
- if the Required SNR is forecast to be achieved on more than 20% but less than 60% of the days of the month, its associated line is 1 pixels in width

Allowing the mouse cursor to hover over an opening forecast by VOACAP's SNR & Prob technique will display three parameters for the selected time and band:

1. the predicted Signal-to-Noise Ratio, in decibels
2. the percentage of days of the month that the Required SNR will be achieved
3. the predicted number of hops among ionospheric layers

You can generate new short path or long path predictions by clicking the **Prediction** tab's **Predict SP** or **Predict LP** buttons respectively.

Interpreting PropView Graphs generated by any Forecasting Engine's LUF & MUF technique
After generating a prediction for propagation between two locations, check the **Plot Critical Frequencies** box and uncheck the **Show Open Bands** box.

The black curve represents the lowest useable frequency (LUF) as a function of time. Any frequency lower than the black curve will not support communications due to absorption.

The blue, green, and red curves provide a statistical range for the maximum useable frequency (MUF) as a function of time. The actual MUF will be at or above the blue curve with 90% confidence, at or above the green curve with 50% confidence, and at or above the red curve with 10% confidence. Any frequency above the actual MUF will not support communications, due to insufficient reflection. To display a **Critical Frequency Colors** panel that provides a color key for each critical frequency color, check **Prediction** tab's **Show Color Keys** box.

So at any specified time, you can identify which frequencies will likely support communication between the specified locations: they are bounded on the low-end by the black curve, and on the high-end by the statistical range between the blue and red curves. You can use the green curve as a kind of "expected MUF" curve; if you're an optimist, use the red curve for this purpose.

To make it easier to see what ham bands are open when, uncheck the **Plot Critical Frequencies** box and check **Show Open Bands**. Horizontal lines represent ham bands lying between the LUF and statistical MUF. The thickest lines indicates openings based on the 90% confidence MUF (the blue curve), and the thinnest lines indicate openings based on the 10% confidence MUF (the red curve).

If you now check "Plot Critical Frequencies", the relationship between horizontal lines and critical frequency curves should be apparent.

Monitoring Beacons

PropView can assess actual propagation by monitoring beacons in the NCDXF/IARU Network, either by band, by location, or by bearing from your QTH. This beacon network involves 18 continuously transmitting beacons deployed around the world, transmitting on the 20m, 17m, 15m, 12m, and 10m amateur bands. Each beacon has a 10 second **slot** on each band, during which it transmits its callsign in CW followed by 4 dashes of 1 second duration. The callsign and first dash are sent at 100 watts; the remaining dashes are sent at 10 watts, 1 watt, and 0.1 watt respectively. With 18 beacons transmitting in turn, a **cycle** is completed on each band every 3 minutes. To minimize beacon hardware, transmission occurs on one band at a time, yielding a schedule with each beacon transmitting once on each band during a cycle. Listening to every beacon on every band with a single receiver requires five cycles -- 15 minutes.

Monitoring beacons with PropView requires that your PC's clock be accurate to the second. This can be accomplished with free software such as AboutTime or Dimension 4 that periodically synchronizes with time servers over the internet, or with PC hardware that synchronizes with time signals received from WWVH or from GPS satellites such as WinTick.

PropView's Beacon Monitor makes it easy to select the beacons you wish to monitor, and can automate required changes in your receiver's frequency and required changes in the bearing of your directional antenna. To activate the monitor, click the **Monitor** button in the Beacon panel at the bottom of PropView's main window. After PropView displays its **Beacon Monitor** window, check the **Enable** box in the upper left corner of this window's **Monitor** panel.

The **Beacon Monitor** window contains two panels: a **Monitor** panel that lets you specify the beacons to which you wish to listen, and a **Beacon Schedule** panel that shows you the upcoming 18 slots of the schedule PropView has assembled for you.

Within the Monitor panel are three sub-panels, corresponding to the three different ways you can select beacons for inclusion in your schedule:

The **Band** sub-panel lets you monitor all beacons on a specific band. Click the **20m** button, for example, and two things happen:
- most of the callsigns shown the **Beacons** sub-panel are rendered in red font
- a list of **events** appears in the **Beacon Schedule** panel

The **Beacons** sub-panel provides two functions: it lets you select beacons arbitrarily, constructing the shortest possible schedule that includes all of beacons you wish to monitor, and it provides a visual indication -- using red font -- of which beacons are included in the schedule. Depending upon your selections, your schedule may involve up to five 3-minute cycles, containing a total of 90 beacon transmission events. Thus the **Beacon Schedule** panel may show only some of the beacons in your schedule -- those that will be transmitting within the next 180 seconds.

If you have a directional antenna, it's convenient to monitor groups of beacons whose bearing from your QTH are within your antenna's beam width. When you chose a beam heading in the **Octant** sub-panel, PropView creates a schedule containing all beacons whose bearing lies within 30 degrees, corresponding to a 60 degree beam width. If you've checked this panel's **Rotate** box and are running DXView version 1.5.1 or later with a PC-controllable antenna rotator, selecting a beam heading will automatically rotate your antenna. Since octants are 45 degrees in width and PropView assumes a 60 degree beam width, don't be surprised if some beacons appear in schedules generated from more than one octant selection.

The **Band**, **Beacons**, and **Octant** sub-panels each provide independent means of generating a beacon schedule, though all use red font in the **Beacons** sub-panel to indicate selected beacons. Whenever you create a schedule using one of these sub-panels, it immediately replaces the previously active schedule. As long as the Enable checkbox in the Monitor panel's upper left corner is checked, PropView will advance the **Beacon Schedule** every 10 seconds; the top-most entry in this schedule identifies the currently transmitting beacon, its location, its frequency, its bearing from your QTH, and its distance from your QTH in either miles or kilometers, as specified in the configuration window. If you are running DXView version 1.5.1 or later, you can check the **Map** box in the **Monitor** panel; doing so will direct DXView to display the location of the currently-transmitting beacon on its world map. Checking the **Predict** box in the **Monitor** panel directs PropView to compute and display a propagation forecast for the currently transmitting beacon so you can compare actual and predicted propagation.

If you are running Commander version 3.7.3 or later with the **Monitor** panel's **Enable** box checked in PropView's **Beacon Monitor** window, then checking the **QSY** box in the **Monitor** panel will direct Commander to

- place your radio in CW mode
- enable split, if your radio supports it (preventing QSYs from activating a transceiver's TX relays)
- adjust your radio's frequency 2 seconds before the beginning of the next scheduled beacon transmission, enabling you to hear all of the current transmission and giving your radio time to change frequency for the next beacon transmission

PropView only changes your radio's frequency as required by the beacon schedule. If all events in the schedule occur on 21150 kHz, PropView will set your radio's frequency once, so if you manually change frequency or mode in this situation, it's up to you to appropriately restore the radio's settings. If successive transmissions in the schedule occur on different frequencies, PropView will QSY your radio for each transmission.

The **Monitor** panel's **Transceiver** sub-panel lets you specify a positive or negative **Offset** in Hertz; you can use this to position beacon signals within your transceiver's receive passband.

By design, all beacons can be monitored on a single band within one 3-minute cycle. Click the **Band** sub-panel's 15m button, for example; note that the **Band** sub-panel's caption parenthetically indicates the schedule length in cycles. If you check a box in the **Beacon** sub-panel, a one-cycle schedule will be created. If you check another box, whether the schedule must be expanded to two cycles depends on which two beacons you have chosen. As you select additional beacons, the schedule is automatically extended to accommodate them. If you select every beacon, a 5-cycle schedule will be generated.

Not all beacons are active, or are active on all bands. If you click the **20m** button, for example, inactive beacons will remain in black font in the **Beacons** panel. These stations are currently inoperative; you can check their boxes in the **Beacons** panel, but no schedule entries will be generated. PropView obtains information about Beacon location from a text file named BeaconLocation.txt located in the PropView folder. This file specifies one line for each beacon with the following information in comma-delimited format:

- callsign
- DXCC entity prefix
- Country
- City
- latitude, e.g. 40 45' N
- longitude, e.g. 73 58' W
- grid square
- continent
- CQ zone
- ITU zone
- Time zone

PropView also obtains information about Beacon schedules from a text file. If a file named `CustomBeaconSchedule.txt` is present in PropView's folder, the schedules specified in this file are utilized; otherwise, PropView uses the schedules specified in the `BeaconSchedule.txt` file installed with Propview and distributed with PropView updates. This arrangement enables you to customize the Beacon Schedule information if desired - for example, to temporarily remove beacons known to be offline for maintenance - and not have this customized information be overwritten by a PropView update. Both beacon schedule files specify one line for each active beacon transmission with the following information in comma-delimited format:

- callsign
- frequency, in mHz
- the second of the start of the first transmission within each 3 minute beacon cycle (a number from 0 to 170 that is divisible by 10)

A beacon that is currently inactive on all bands would have no entries in `BeaconSchedule.txt`. A beacon that is active on some but not all bands would only have entries in `BeaconSchedule.txt` for the active bands.

If the location of one or more beacons changes, as reported by the NCDXF,
1. terminate PropView
2. update the `BeaconLocation.txt file accordingly`
3. start PropView

If the status of one or more beacons changes, as reported by the NCDXF,
1. update the `BeaconSchedule.txt file accordingly`
2. in the **Monitor** panel, uncheck the **Enable** box
3. in the **Monitor** panel, check the **Enable** box

Distance and bearing to each beacon is computed using the QTH latitude and longitude specified in the **Transmitter Panel** on the **Parameters tab** of PropView's main window; you can more conveniently set QTH information using DXView. Changing your QTH location is immediately reflected in the distance and bearings shown in the **Beacon Schedule**.