Satellite Antenna Dish Pointing
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Dish antennae are used for signal reception from geo-stationery satellites located at fixed positions in the sky. The dishes typically are of one of two varieties, large and small. The small dishes most often are used for residential TV reception of streaming signals from either DISH or Direct TV subscriptions, using receivers provided by the companies for the purpose. Most often the antenna dishes are mounted and pointed by technicians at the time of initial installation. Usually repointing is not necessary unless the antenna is moved for reasons such as re-roofing, line of sight interference, use at another location, etc. Large dishes generally are for commercial use but are also subject to initial or occasional- move pointing for signal reception. There are numerous geo-stationary satellites (and relatively close together) used for signal transmission, each with its many signal channels and specific formats for signal reception.

Dish pointing can be a daunting task since the satellites are not visible to the naked eye. Steps to be followed for pointing include:

1. Obtain information from your signal supplier as to satellite name, channel for desired signal, and format-setup information for the receiver.

2. Obtain Azimuth and Elevation data for the satellite in angle degrees. In the case of large dish antennae, the skew (rotation) angle of the sense-element also will be needed. Several Internet sources for pointing data can be found with a web search the using satellite name. Two of such are:

   http://www.groundcontrol.com/Satellite_Look_Angle_Calculator.htm
   http://www.satellite-calculations.com/Satellite/lookangles.htm

3. Generally, these will need inputting the pointing calendar- day desired, along with Latitude, Longitude, and Elevation, as inputs to give the desired information for pointing. Some web sites allow direct GPS assisted locating rather than use of the antenna Latitude, Longitude and Elevation.

4. Adjust the dish to the foregoing location-data and look for the signal with the receiver. If not found, try minor adjustments in the angle inputs. With a signal, then use the receiver's signal-strength output to obtain maximum reception signal-strength by the dish's angle adjustments.
5.

The dish elevation angle usually can be set using a small carpenter's level and a protractor, taping a string from top to bottom to simulate the face of the dish. The Azimuth most often is approximated with a magnetic compass and noticing a distant

landmark on or near the needed azimuth. Then point the dish toward the object. The second web site above also will give the time of day that the sun and satellite are directly vertical from each other. Use sufficiently darkened goggles to view the sun at this actual time for Azimuth pointing. A more accurate method is to use a vertical post or stick and marking the sundial type shadow line (at the precise time of day given) on the ground as a reference line for the desired Azimuth. Then use two equal-length long strings, one end of each taped halfway up the sides of the dish and then stretched out fully and tied together at the other ends. This will give the existing Azimuth of the dish for comparison with the desired Azimuth as shown by the marked off ground-shadow of the post.