

Atacama Large Millimeter

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*Software
Manual*

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Dartboard GUI Component

Software Manual

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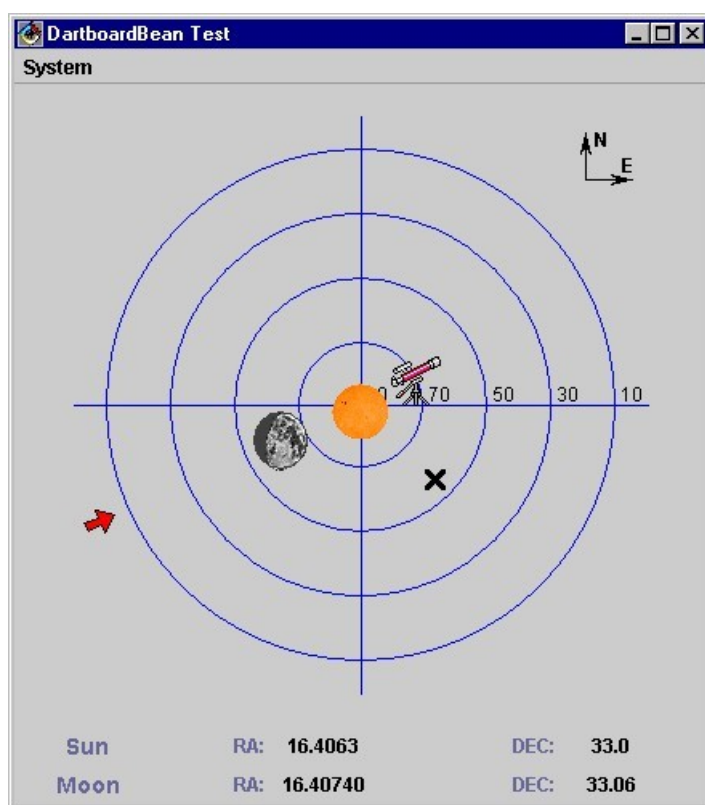
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1 Introduction

Dartboard is a GUI component that is used for displaying positions of the Sun, the Moon, and a selected Telescope in the sky. It is also displaying wind direction and speed. When fully functional, the Dartboard should look something like this:



1.1 Coordinate system

The radial direction represents the elevation coordinate, ranging from 0 to 90 degrees – the targets circle corresponds to 10 degrees and the centre to 90 degrees. The azimuth coordinate is represented by the polar angle on the Dartboard, azimuth zero is located on the vertical line going upwards from the centre. Azimuth is increasing in the clockwise direction.

1.2 The Sun, the Moon and the Telescope

The Sun, the Moon and the Telescope are all represented as icons on the Dartboard. The Moon's icon also shows current lunar phase. The black cross is representing the desired direction of the telescope.

In the panel on the bottom of the Dartboard the Sun's and Moon's rightascension and declination are displayed.

1.3 The wind

The wind is represented by a coloured arrow around the circumference of the Dartboard. Wind direction is displayed by the position of the arrow. Wind speed is represented by the color of the arrow, where:

- $v < 12$ m/s green colour
- $12 \text{ m/s} < v < 18$ m/s yellow colour
- $v > 18$ m/s red colour

2 Design-time usage

For configuring the Dartboard to visualize the required properties, use the visual composition's property-to-property connection to connect the appropriate properties from the DeviceBeans that represent the Moon, the Sun and the telescope to the corresponding properties of the DartboardBean. DartboardBean properties are:

- RODoubleProperty telescopeElevation
- RODoubleProperty telescopeAzimuth
- RODoubleProperty telescopeDestinationElevation
- RODoubleProperty telescopeDestinationAzimuth
- RODoubleProperty sunElevation
- RODoubleProperty sunAzimuth
- RODoubleProperty sunRightAscension
- RODoubleProperty sunDeclination
- RODoubleProperty moonElevation
- RODoubleProperty moonAzimuth
- RODoubleProperty moonRightAscension
- RODoubleProperty moonDeclination
- ROIntProperty moonPhase
- RODoubleProperty windDirection
- RODoubleProperty windSpeed

At the end, when all the connections are made, the Dashboard should look something like this:

