

# Practice Work Session P5 (2h)

## Preparation of observation

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#### **Abstract**

This Practice Work Session focusses on the selection of a good calibrator for interferometric observations. The SearchCal tool (SC) is used as an example.

## **1 Setup**

The session will use the local server (<http://192.168.8.119>) since the SC application works only on a client-server basis. From the Mozilla web browser, open the <http://192.168.8.119> website and start the web version of aspro (“start the application launcher applet”). Do not use authentication. A “Choose...” menu appears. Select the full ASPRO interface.

The documentation for SC is included in the ASPRO documentation and is provided on the school website.

## **2 starting SC**

We will use the “WHERE” and “WHAT” menus, defining first the interferometer (VLT 2T + Amber).

We will find first the calibrators for Achernar in K ( $2.1\mu$ ).

- Retrieve the CDS coordinates of Achernar, acknowledge the values.
- Open the “Search Calibrators” menu item.
- Note that the max baseline length is given as an information.
- Achernar’s K magnitude is 0.88.
- Change Min&Max magnitudes to -1 3 to bracket the object’s magnitude (why?).
- GO

The server side of the program queries the various catalogs. Hopefully, if the CDS answers arrive in a reasonably short time, a result panel appears.

### 3 the result panel

How many stars were found? How many selected? What was the reasons several stars were not selected? Why such a small number of calibrators?

Colors in list: they have a meaning. For example, what is the originating catalog for the JHK magnitudes of HD14641? What is the confidence index of the corresponding visibility? Why such a low (far from  $V=1.0$ ) visibility?

### 4 Other buttons

Use the “SHOW DETAILS” button to see all information. Use the “SHOW ALL RESULTS” to see a complementary list of stars that were not selected as good calibrators because of their multiplicity or variability flags.

### 5 MIDI calibrator

We will now find the calibrators for Achernar, but observed with MIDI at  $10\mu$ . Select MIDI+UT, recall the “Search Calibrators...” menu, enter the Achernar  $10\mu$  magnitude: -1. The panel is slightly different. Get the result. Discuss.

The calibrator found is closer than at K, and has a better visibility. Why?

### 6 Fainter Star, K band

Let’s go back to VLTI+AMBER, in K band, but with a fainter star, Gl551 (take mag K 5.28).

Fainter stars are more numerous, we will restrict ourselves to a search zone of 20 minutes of time in RA and 2 degrees in declination.

Same questions as in section 3. The visibilities are now better (for a calibrator). Why? What would be your final choice in that list for the Gl551 star?

Use the “sort above list” subpanel to sort the list according to the various sorting parameters.