

## **Instructions for Executing the *cone\_search* Python Script with an Example**

### **Step 1: Enter your ESO username and password to authenticate.**

For example, if your username is xxx, enter xxx when prompted, followed by your password.

```
Type your ESO username: xxx
xxx user's password: 
```

**Note:** If authentication fails, then the session will proceed anonymously which will allow you to access only publicly available files in the ESO archive.

### **Step 2: Enter the name of the source you wish to search.**

For example, if the source name is the SUN, enter SUN as shown below:

```
Enter target name: SUN
```

### **Step 3: If you enter *y* (yes), proceed to Step 3a; if you enter *n* (no), continue to Step 3b.**

```
Do you want to apply filters on instruments for spectroscopy? [y/n]:
```

### **Step 3a: Enter the name of the instrument used to observe your source.**

If multiple instruments were used, separate their names with commas. For example, if the target was observed with ESPRESSO and NIRPS, enter: ESPRESSO,NIRPS

```
Enter instruments (comma-separated, e.g., ESPRESSO,HARPS,NIRPS): ESPRESSO, NIRPS
```

**Step 3b:** If no instrument filters are applied, the search will include observations from the following instruments: ESPRESSO, HARPS, NIRPS, and FEROS.

**Step 4: Specify the search radius for the cone search in arcminutes.**

The center of the search is defined by the right ascension (RA) and declination (Dec) of your source.

For example, to search within 0.1 arcminutes, enter the value as shown below:

```
Radius for cone search in arcmin: 0.1
```

**Step 5: If you enter y (yes), you can proceed to Step 6.**

If you enter n (no), your source will be retrieved from all available data in the ESO archive.

```
Do you want to apply filters on date? [y/n]:
```

**Step 6: Enter the start and end dates for the observation data you wish to retrieve, following the specified format.**

For example, to retrieve data from November 2024 and December 2024, enter the dates as shown below:

```
Start date of observational data (DD-MM-YYYY): 01.11.2024  
End date of observational data (DD-MM-YYYY): 31.12.2024
```

**Step 7:** If you enter *y* (yes), the raw science frames will be downloaded. If you enter *n* (no), the reduced data (spectrum) will be downloaded instead.

```
Do you want to download raw data? [y/n]:
```

**Step 8: Enter the name of the folder where you would like the files to be downloaded.**

For example, if your folder is named SUN\_data, enter it as shown below:

```
Where do you want to download the files? Folder name: SUN_data
```

**Note:** After this step, the Python script will query the ESO TAP service at [http://archive.eso.org/tap\\_obs](http://archive.eso.org/tap_obs) and initiate the download of your files.