

ASTRO_NERD

by Tink-rs

A girl who loves Conky & Coding

GNU GPLv3 – 2022

<https://www.gnu.org/licenses/gpl.html>

(Bargraph Lua by Wlouf on DeviantArt)

(MoonMini section is a fork (complete rebuild) by Trink-rs of MoonGiant by @unklar on Github)

SETUP INSTRUCTIONS

This conky widget requires you have “Conky-all” installed vs just Conky as it requires the full library of Conky dependencies to run the Lua script.

Ubuntu/Debian:

```
sudo apt install conky-all
```

CentOS and Fedora:

```
sudo yum install conky-all
```

DIRECTORY LOCATION

You must install this widget in your \$HOME/.conky folder.

Do not remove the files from the folder. Just place the Astro_Nerd_Conky FOLDER into your .conky directory.

The path should be ~/.conky/Astro_Nerd_Conky/...

If you place this folder in a directory other than \$HOME/.conky you will need to edit all the paths in all .sh files and the config file, otherwise the scripts will not work.

If you do need to edit paths, pls use a proper text editor like gedit and use the “find and replace” feature. It’ll make quick work of the job and leaves less room for error/typos.

WIDGET DEPENDENCIES

This widget requires the installation of a very small command line add-on to run.

Xidel command line tool is an awesome web scrapping tool and does things wget can't.

This widget also uses Wget – on most distros it is installed by default.

~~~~~ INSTALL 'Xidel' ~~~~~

Download the file here: <https://www.videlibri.de/xidel.html#downloads>

Ubuntu/Debian based systems require the Debian: 64 bit file.
Other distros will use the Universal Linux file.

~~~~~ CHECK for Wget and/or Install ~~~~~

Ubuntu/Debian

Open terminal

Enter: `wget --version`

if no version is returned, then

Enter: `apt-get update -y`

then: `apt-get install wget -y`

CentrosOS/Fedora

Open terminal

Enter: `wget --version`

if no version is returned, then

Enter: `yum update -y`

then: `yum install wget -y`

WALLPAPER

If you want to use it, the background is available at:

<https://wallpaper-mania.com/post/wallpaper-id-777000115087/>

Note: I used Gimp to change some water drops to teal.

Setting Up Astro_Nerd Scripts

****** You **MUST** use a proper text editor such as Gedit or Gnome Text Editor

HEMISPHERE AND MEASUREMENTS

The script is set to “north” hemisphere and “metric” measurements by default.

To change these:

Open the asteroid_moon.sh (in the “scripts” folder)

Remove the # (hashtag) in front of your new selection AND place a # (hashtag) in front of the default selection.

Only 1 HEMISPHERE and MEASUREMENT can be active or the script will break.

RUNNING THE SCRIPTS

We are going to set the scripts to run outside of Conky as a cron job. This will run the processes in the background and lessen the CPU demand on your system. It will also control the downloading of data. (If we run the scripts in an `#{execi}` tag in Conky, we will have to wait 2 hrs for the solar data to update each time we start the computer and we will be downloading the asteroid and moon data multiple times a day.)

The sun.sh script is set to refresh the data and retrieve new solar images every 2 hours. The images.sh creates a “slideshow” which runs every 12 minutes. The asteroid_moon.sh retrieves the asteroid and moon data.

The set-up is well documented. Just take your time with each step. You’ve got this. :)

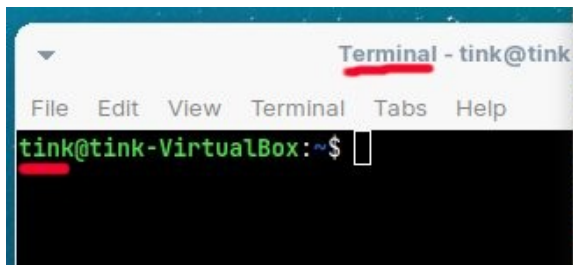
Ready the .sh (shell script files)

Because the scripts are running in cron, we need to use absolute file paths. So, first step is to edit: asteroid_moon.sh, images.sh and sun.sh (in the “scripts” folder)

the paths are currently set as:

/home/**yourusername**/.conky/Astro_Nerd_Conky/...

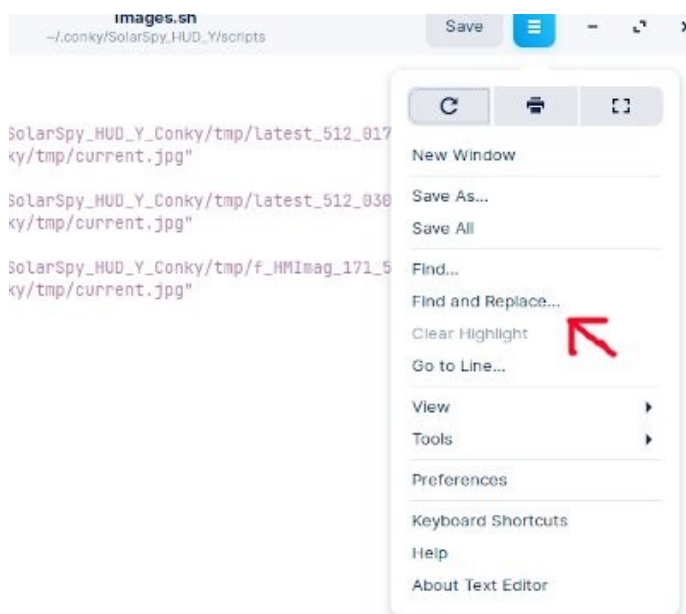
We need to replace **yourusername** with your actual user name.
(Your user name is the name before the @ in terminal)



Open the sun.sh file in the text editor

Click on the menu for the “Find and Replace” tool

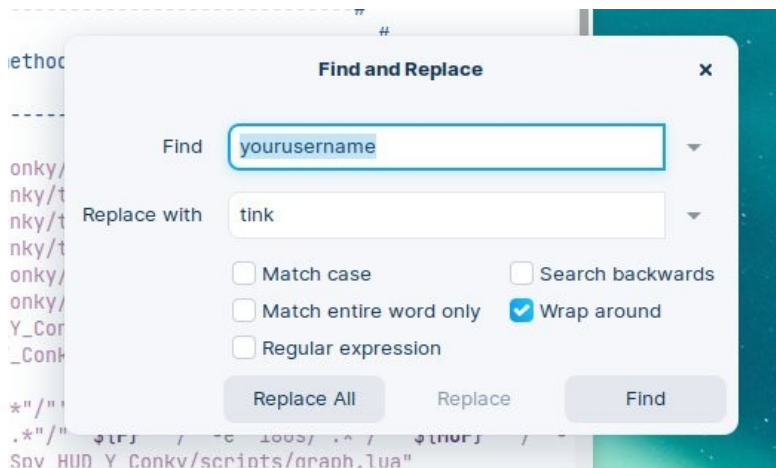
(In Gedit, the menu is on the right)



In the **find box** paste this word: yourusername

In the **replace with box** type in your actual user name

(My user name is Tink, so that's what I put in the "Replace With" for the eg.)



Click 'Replace All'

Now save and close.

Rinse and repeat, following the above steps with the asteroid_moon.sh, images.sh files, and also Cron_Commands file (in the main folder).

MAKE SCRIPTS EXECUTABLE

NOTE: Because we are running these as cron jobs as root, we need to add 'a' to our chmod command. Just making them "+x" executable is not enough on some systems.

(To paste code into terminal use `ctl + shift + v` or right click 'paste')

open the 'scripts' folder (or continue in the terminal from the previous step)

right click on a blank space

select "open in terminal"

(or cd into the directory if you prefer)

Enter: `sudo chmod a+x sun.sh` (then hit enter)

Enter: `sudo chmod a+x images.sh` (then hit enter)

Enter: `sudo chmod a+x asteroid_moon.sh` (then hit enter)

UPDATE THE DATA

(We will set this as a cron job in a moment, but the cron job will take 2 hrs before it updates the sun data and 12 min before the image “slideshow” starts, we could wait, HOWEVER, this is the best way to test that you changed the paths properly.)

open the ‘scripts’ folder
right click on a blank space
select “open in terminal”
(or cd into the directory if you prefer)

Enter: `bash -x asteroid_moon.sh`

You will see terminal output of running of the script. Use it for troubleshooting.

then: `bash -x sun.sh`

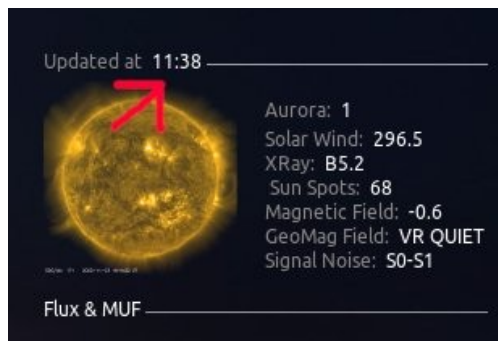
The script will sleep for 40 seconds before it runs, so be patient.

Once it fully completes...

then: `bash -x images.sh`

This script will sleep for 50 seconds before it runs. It will take 12 minutes to complete the slideshow, so leave the terminal open and running and move on with the next steps.

The “Updated at” time in the widget should now be current and the images will begin to cycle through 1 “round” of a slideshow. (4 minutes per images)



SET SCRIPTS TO AUTO-RUN IN CRON

yourusername must be replaced with your linux username.

The cron jobs are coded to create reports that will show up in the “Cron_Reports” folder. This will help you troubleshoot if needed.

We are adding 2 sets of cron jobs – one to run once (as root) on start-up (so that our info is updated immediately on start-up)

And the 2nd job to run our scripts on a regular time schedules.

“ON START-UP” CRON JOB

Open a new terminal

Enter: `sudo -i`

Terminal will ask for your password

Enter your password

(you are now logged in as root)

Enter: `crontab -e`

(Terminal will open crontab in an editor.)

Use your keyboard down arrow to move cursor below all the text. Paste the code below into the empty space on the cron tab.

COPY THIS CODE FROM THE TEXT FILE – CRON_COMMANDS – (seems the below code is breaking into multiple lines when copying to the crontab editor. Each command should sit on one line.)

paste: `@reboot`

```
/home/yourusername/.conky/Astro_Nerd_Conky/scripts/sun.sh >>  
/home/yourusername/.conky/Astro_Nerd_Conky/Cron_Reports/sun_reboot_errors 2>&1
```

Hit enter

Then paste: `@reboot`

```
/home/yourusername/.conky/Astro_Nerd_Conky/scripts/images.sh >>  
/home/yourusername/.conky/Astro_Nerd_Conky/Cron_Reports/images_reboot_errors 2>&1
```

Hit enter *(the extra blank line is needed on some cron versions – a weird quirk)*

Save the file *(in Nano hit `ctl s`, then `crtl x`)*

Crontab editor should be closed now and you are back in terminal.

Now start the `@reboot` cron service

Debian/Ubuntu enter: `systemctl start cron.service`

Older Debian/Ubuntu enter: `update-rc.d cron defaults`

CentOS/Fedora enter: `systemctl enable crond.service`

Older CentOS/Fedora enter: `service crond start`

Enter: `exit`

(you should now be out of root and back as your user)

Stay in terminal for our next task.

REGULAR TIME SCHEDULED CRON

Enter: `sudo crontab -e`

Enter:

```
0 */2 * * * bash
/home/yourusername/.conky/Astro_Nerd_Conky/scripts/sun.sh >>
/home/yourusername/.conky/Astro_Nerd_Conky/Cron_Reports/sun_err
ors 2>&1
```

Hit enter, then on the next line enter....

```
*/12 * * * * bash
/home/yourusername/.conky/Astro_Nerd_Conky/scripts/images.sh >>
/home/yourusername/.conky/Astro_Nerd_Conky/Cron_Reports/images_
errors 2>&1
```

Hit enter, then on the next line enter...

```
@daily bash
/home/yourusername/.conky/Astro_Nerd_Conky/scripts/asteroid_moo
n.sh >>
/home/yourusername/.conky/Astro_Nerd_Conky/Cron_Reports/asteroi
d_cron 2>&1
```

Ensure there is one blank line below (a weird quirk of crontab in some distros)

Save the file (in Nano hit `ctl +s`, then `ctrl +x`)

Stay in terminal for our next task.

START THE CRON SERVICE

Remember, after we start the service it will take 2 hrs for the data to update and 12 min before the images start the "slideshow".

~~~~~ Debian/Ubuntu ~~~~~

### Newer versions

Enter: `sudo systemctl enable cron.service`

then: `sudo systemctl start cron.service`

check cron is running: `systemctl status cron`

## Older Versions

**Enter:** `update-rc.d cron defaults`  
**then:** `/etc/init.d/cron start`  
**check cron is running:** `pgrep cron`

~~~~~ CentOS/RHELv7.x+ and newer Fedora ~~~~~

Newer versions

Enter: `sudo systemctl enable crond.service`
then: `sudo systemctl start crond.service`
check if cron is running: `systemctl status crond.service`

Older versions CentOS/Fedora:

Enter: `chkconfig crond on`
then: `service crond start`
check cron is running: `service crond status`

HOW TO STOP CRON JOBS

If you wish to stop the cron jobs for any reason, simply open crontab in terminal...

`sudo crontab -e`

Delete the entries, then save.

Then enter: `sudo -i`

Then: `crontab -e`

Delete the entries, then save.

To remove the report files, open the Cron_Reports folder, right click on blank space and select "open terminal"

Enter:

`sudo rm error-file-name` (replace highlighted text with the file name)

eg: `sudo rm asteroid_cron`

LAYOUT

All files should be edited in a proper text editor such as Vim, Nano, Gedit etc.

The nature of Conky is that it will not display the same on every device. This widget was designed for 1920x1080 resolution. But no matter how much care I've taken to align everything, you will undoubtedly have to make adjustments and realign things.

GRAPHS

The graphs display independently of the config file (astro_rc) To access the graphs go to the bargraphs.lua file in the scripts folder.

***** **IMPORTANT** *****

DO NOT add or remove any lines in the **BARGRAPHS.LUA** file.
The sun.sh and asteroid_moon.sh scripts write the data values to the **GRAPH SECTIONS** in this file, assigned by line number.

ADJUST GRAPH POSITION

x=14,y=815,
x is the vertical position and y is the horizontal position

CHANGE GRAPH COLORS

```
name="cpu",  
arg="cpu7",  
angle=90,  
max=1000000,  
alarm=900000,  
bg_colour={0x4a4e50,0.25},  
fg_colour={0x1789db,1},  
alarm_colour={0x77ae00,1},  
x=14,y=777,  
blocks=45,  
height=4,width=14,  
draw_me=true,
```

Replace the 6 characters between the “0x” and the “,” with any rgb value.

IMAGES

The images.sh script copies the solar images (once every 4 minutes) and writes it as ‘current.jpg’ in the tmp folder.

The asteroid_moon.sh script copies the relevant moon phase image and writes it as ‘current_moon.png’... so...

DO NOT change the image name in the \${image} tag in the astro_rc file unless you know what you are doing.

SUN “slideshow” TIMMING

To change the display time, edit the images.sh file.

Each image is set to show for 4 minutes (x3 images) which means it takes the script 12 minutes in total to execute.

Lines 5, 7 and 9 have a sleep command. This controls the timing. Change it to whatever you wish, however, the sleep command on line 9 is written in seconds because it needs to be 10 secs less. This is to ensure there is no over-lap in the execution as a cron job.

Whatever you change it to, you must also adjust the crontab entry to match. So, if you changed the images to sleep for 5 minutes each, it will take the script 15 minutes in total to execute. On the crontab entry, change the “/12” (which indicates 12 minutes) to “/15”

A note about transparency and Conky

Conky has some shortcomings when it comes to transparency. You will need to use a fairly dark background in order for the text color and images to display properly. Transparency on a light background with Conky just doesn't work. If you insist on using a light background then you will need to enable Conky's background.