

### 3. Get Pixel Position

```
from astro_pi import AstroPi

ap = AstroPi()

pixel_list = ap.get_pixels()
```

### 4. Clear all Pixels

```
from astro_pi import AstroPi
from time import sleep

ap = AstroPi()

red = (255, 0, 0)

ap.clear() # no arguments defaults to off
sleep(1)
ap.clear(red) # passing in an RGB tuple
sleep(1)

ap.clear(255, 255, 255) # passing in r, g and b
values of a colour
```

### 5. Rotate the LEDs

```
from astro_pi import AstroPi

ap = AstroPi()

ap.set_rotation(180)
```

### 6. Flip the LED Horizontally

```
from astro_pi import AstroPi

ap = AstroPi()
ap.flip_h()
```

### 7. Flip the LED Verically

```
from astro_pi import AstroPi

ap = AstroPi()
ap.flip_v()
```

### 17. Get Gyroscope Reading

```
from astro_pi import AstroPi

ap = AstroPi()

raw = ap.get_gyroscope_raw()

print("x: {x}, y: {y}, z: {z}".format(**raw))
```

### 18. Get Acceleration

```
from astro_pi import AstroPi

ap = AstroPi()

raw = ap.get_accelerometer_raw()

print("x: {x}, y: {y}, z: {z}".format(**raw))
```



#### FURTHER DETAILS

<https://github.com/astro-pi>

<http://astro-pi.org/hardware/>

<https://www.raspberrypi.org/>

Produced by TeCoEd



code

cheat book

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**Usage:** Code reference for the Astro Pi. Import the Astro Pi module and instantiate an object:

Load LX Terminal—type `sudo idle``



## 1. Set LED Pixels to Create an Image

```
from astro_pi import AstroPi
ap = AstroPi()

X = [255, 0, 0] # Red
0 = [255, 255, 255] # White

question_mark = [
0, 0, 0, X, X, 0, 0, 0,
0, 0, X, 0, 0, X, 0, 0,
0, 0, 0, 0, 0, X, 0, 0,
0, 0, 0, 0, X, 0, 0, 0,
0, 0, 0, X, 0, 0, 0, 0,
0, 0, 0, X, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, X, 0, 0, 0, 0
]
```

```
ap.set_pixels(question_mark)
```

## 2. Load an Image

Loads an image file, converts it to RGB format and displays it on the LED matrix. The image must be 8 x 8 pixels in size.

```
from astro_pi import AstroPi
ap = AstroPi()

ap.load_image("space_invader.png")
```

## 8. Scroll a Message

Scrolls a text message from right to left across the LED matrix and at a specified speed, colour and background colour. (*scroll\_speed, back\_colour*)

```
from astro_pi import AstroPi
ap = AstroPi()
ap.show_message("One small step for Pi!", \
text_colour=[255, 0, 0])
```

## 9. Show a Single Letter

Displays a single text character on the LED matrix.

```
import time
from astro_pi import AstroPi

ap = AstroPi()

for i in reversed(range(0,10)):
    ap.show_letter(str(i))
    time.sleep(1)
```

## 10. Get the Humidity Reading

```
from astro_pi import AstroPi

ap = AstroPi()
humidity = ap.get_humidity()

print("Humidity: %s %%rH" % humidity)
```

## 11. Get the Current Temperature

```
from astro_pi import AstroPi

ap = AstroPi()
temp = ap.get_temperature()

print("Temperature: %s C" % temp)
```

## 12. Get the Current Pressure

```
from astro_pi import AstroPi
ap = AstroPi()

pressure = ap.get_pressure()

print("Pressure: %s Millibars" % pressure)
```

## 13. Get Orientation in Radians

```
from astro_pi import AstroPi

ap = AstroPi()

orientation_rad = ap.get_orientation_radians()

print("p: {pitch}, r: {roll}, y: \
{yaw}".format(**orientation_rad))
```

## 14. Get Orientation in Degrees

```
from astro_pi import AstroPi

ap = AstroPi()
orientation = ap.get_orientation_degrees()

print("p: {pitch}, r: {roll}, y: \
{yaw}".format(**orientation))
```

## 15. Get Orientation

```
from astro_pi import AstroPi

ap = AstroPi()

orientation = ap.get_orientation()

print("p: {pitch}, r: {roll}, y: \
{yaw}".format(**orientation))
```

## 16. Get Compass Reading

```
from astro_pi import AstroPi

ap = AstroPi()
north = ap.get_compass()

print("North: %s" % north)
```

### Note:

Some of the above lines of code end with a `\` this indicates that the code is written on one single line but has been edited to fit the publication.