mission_to_mars

March 27, 2018

0.1 Mission to Mars

```
In [1]: from bs4 import BeautifulSoup
        import pymongo
        from splinter import Browser
        import requests
        import time
        import pandas as pd
```

0.2 NASA Mars News

```
In [2]: #set up splinter browser
        executable_path = {'executable_path': 'driver/chromedriver'}
        browser = Browser('chrome', **executable_path, headless = False)

        #visit url
        url = "https://mars.nasa.gov/news/"
        browser.visit(url)

        #pull html text and parse
        html_code = browser.html
        soup = BeautifulSoup(html_code, "html.parser")

        #grab needed info
        news_title = soup.find('div', class_="bottom_gradient").text
        news_p = soup.find('div', class_="rollover_description_inner").text
```

0.3 JPL Mars Space Images - Featured Image

```
In [6]: # Featured Image URL & visit
        jpl_url = "https://www.jpl.nasa.gov/spaceimages/?search=&category=Mars"
        browser.visit(jpl_url)

        #navigate to link
        browser.click_link_by_partial_text('FULL IMAGE')
        time.sleep(10)
        browser.click_link_by_partial_text('more info')
```

```python
# #get html code once at page
image_html = browser.html

# #parse
soup = BeautifulSoup(image_html, "html.parser")

# #find path and make full path
image_path = soup.find('figure', class_='lede').a['href']
featured_image_url = "https://www.jpl.nasa.gov/" + image_path
print(featured_image_url)
```

https://www.jpl.nasa.gov//spaceimages/images/largesize/PIA18058_hires.jpg

0.4 Mars Weather

```python
In [8]: marsweather_url = "https://twitter.com/marswxreport?lang=en"
        browser.visit(marsweather_url)

        weather_html = browser.html

        soup = BeautifulSoup(weather_html, 'html.parser')

        mars_weather = soup.find('p', class_="TweetTextSize TweetTextSize--normal js-tweet-text
```

0.5 Mars Facts

```python
In [9]: #mars facts url and splinter visit
        facts_url = "https://space-facts.com/mars/"
        browser.visit(facts_url)

        #get html
        facts_html = browser.html

        soup = BeautifulSoup(facts_html, 'html.parser')
        soup
```

```
Out[9]: <!DOCTYPE html>
        <html lang="en-US" prefix="og: http://ogp.me/ns#" xmlns="http://www.w3.org/1999/xhtml">
        <meta content="153d19f04460b5eb7b1ed2d38890ad1e" name="maValidation"/>
        <meta charset="utf-8"/>
        <link href="https://space-facts.com/feed/" rel="alternate" title="Space Facts RSS Feed"
        <title>Mars Facts - Interesting Facts about Planet Mars</title>
        <meta content="Scientific, historic and cultural facts about Mars, the &quot;Red Planet
        <link href="https://space-facts.com/mars/" rel="canonical"/>
        <meta content="en_US" property="og:locale"/>
        <meta content="article" property="og:type"/>
        <meta content="Mars Facts - Interesting Facts about Planet Mars" property="og:title"/>
```

```html
<meta content="Scientific, historic and cultural facts about Mars, the &quot;Red Planet
<meta content="https://space-facts.com/mars/" property="og:url"/>
<meta content="Space Facts" property="og:site_name"/>
<meta content="mars" property="article:tag"/>
<meta content="Planets" property="article:section"/>
<meta content="2012-01-05T13:32:39+00:00" property="article:published_time"/>
<meta content="2017-12-06T21:13:47+00:00" property="article:modified_time"/>
<meta content="2017-12-06T21:13:47+00:00" property="og:updated_time"/>
<meta content="https://space-facts.com/wp-content/uploads/mars.jpg" property="og:image"
<meta content="https://space-facts.com/wp-content/uploads/mars-size.png" property="og:
<meta content="https://space-facts.com/wp-content/uploads/mars-orbit.png" property="og
<meta content="summary" name="twitter:card"/>
<meta content="Scientific, historic and cultural facts about Mars, the &quot;Red Planet
<meta content="Mars Facts - Interesting Facts about Planet Mars" name="twitter:title"/>
<meta content="@_spacefacts" name="twitter:site"/>
<meta content="https://space-facts.com/wp-content/uploads/mars.jpg" name="twitter:image
<meta content="@_SpaceFacts" name="twitter:creator"/>
<script async="" src="https://apis.google.com/_/scs/apps-static/_/js/k=oz.gapi.en_US.9
<link href="//s0.wp.com" rel="dns-prefetch"/>
<link href="//fonts.googleapis.com" rel="dns-prefetch"/>
<link href="//s.w.org" rel="dns-prefetch"/>
<link href="https://space-facts.com/feed/" rel="alternate" title="Space Facts ż Feed" t
<link href="https://space-facts.com/comments/feed/" rel="alternate" title="Space Facts
<link href="https://space-facts.com/mars/feed/" rel="alternate" title="Space Facts ż Ma
<script>window._wpemojiSettings={"baseUrl":"https:\/\/s.w.org\/images\/core\/emoji\/2.4
!function(a,b,c){function d(a,b){var c=String.fromCharCode;l.clearRect(0,0,k.width,k.he
<style>img.wp-smiley,
img.emoji{display:inline !important;border:none !important;box-shadow:none !important;l
<link href="//space-facts.com/wp-content/cache/wpfc-minified/b7a1752262e52bb94d575fa893
<link href="https://fonts.googleapis.com/css?family=Open+Sans%3A400%2C400italic%2C600%
<link href="//space-facts.com/wp-content/cache/wpfc-minified/50145cfd8173c9370d583a1959
<script src="https://space-facts.com/wp-includes/js/jquery/jquery.js?ver=1.12.4"></scri
<script src="https://space-facts.com/wp-includes/js/jquery/jquery-migrate.min.js?ver=1
<script>
var wpp_params={"sampling_active":"0","sampling_rate":"100","ajax_url":"https:\/\/space
</script>
<script src="https://space-facts.com/wp-content/plugins/wordpress-popular-posts/public/
<script src="https://space-facts.com/wp-content/themes/OneShot/js/audio-player.js?ver=4
<link href="https://space-facts.com/wp-json/" rel="https://api.w.org/"/>
<link href="https://space-facts.com/xmlrpc.php?rsd" rel="EditURI" title="RSD" type="app
<link href="https://space-facts.com/wp-includes/wlwmanifest.xml" rel="wlwmanifest" type
<meta content="WordPress 4.9.4" name="generator"/>
<link href="https://wp.me/s2wL07-mars" rel="shortlink"/>
<link href="https://space-facts.com/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fspace-fa
<link href="https://space-facts.com/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fspace-fa
<style id="ctcc-css" media="screen">#catapult-cookie-bar{box-sizing:border-box;max-heig
#catapult-cookie-bar a{color:#fff;}
#catapult-cookie-bar .x_close span{background-color:#ffffff;}
```

```
button#catapultCookie{background:#17274e;color:#ffffff;border:0;padding:6px 9px;border-
#catapult-cookie-bar h3{color:#f5f5f5;}
.has-cookie-bar #catapult-cookie-bar{opacity:1;max-height:999px;min-height:30px;}</styl
<link href="//v0.wordpress.com" rel="dns-prefetch"/>
<style>body{background-image:none;background-color:#000000;}
body{color:#f5f5f5;}
a{color:#a1d0ff;}
body a:hover{color:#E41B00;text-decoration:none;}
h1{color:#ffffff;font-size:22px;font-weight:normal;text-transform:capitalize;text-deco
h2{color:#57FF8D;font-size:24px;font-weight:normal;font-style:normal;font-variant:norma
h3{color:#f0f0f0;font-size:22px;font-weight:normal;}
h4{color:#f0f0f0;font-size:18px;font-weight:normal;}
h5{font-weight:normal;}
h6{font-weight:normal;}
input[type=text], input[type=search], input[type=password], textarea{font-family:Arial
input[type=reset], input[type=submit]{background-color:#1a1a1a;color:#ebebeb;}
input[type=reset]:hover, input[type=submit]:hover{background-color:#ffffff;color:#00000
#footer a:hover{text-decoration:none;}
#footer .widgettitle{font-size:22px;}</style>
<link href="https://space-facts.com/wp-content/themes/OneShot/uploads/favicon/favicon.p
<style>@font-face{font-family:'CarbonBlockRegular';src:url('https://space-facts.com/fon
<!--[if lt IE 9]>
<script src="https://space-facts.com/wp-content/themes/OneShot/js/respond.js"></script>
<![endif]-->
<!--[if lt IE 9]>
<script src="https://css3-mediaqueries-js.googlecode.com/svn/trunk/css3-mediaqueries.js
<![endif]-->
<!--[if lt IE 9]>
<script src="https://html5shim.googlecode.com/svn/trunk/html5.js"></script>
<![endif]-->
<meta content="width=device-width, initial-scale=1.0" name="viewport"/><link href="http
<link href="//space-facts.com/wp-content/cache/wpfc-minified/f6c6fe674c5e7554c3084c866:
<link href="https://space-facts.com/?custom-css=1c988d133b" id="wp-custom-css" rel="sty
<link href="https://fonts.googleapis.com/css?family=Open+Sans" rel="stylesheet" type="t
<link href="https://plus.google.com/105688062769412508093/" rel="publisher"/>
<meta content="727375480" property="fb:admins"/>
<script type="application/ld+json">{  "@context":"http://schema.org",
"@type":"WebSite",
"name":"Space Facts",
"alternateName":"SpaceFacts.com",
"url":"https://space-facts.com"
}</script>
<script>(function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){ (:
<link as="script" href="https://adservice.google.com/adsid/integrator.js?domain=space-:
.fb_dialog{background:rgba(82, 82, 82, .7);position:absolute;top:-10000px;z-index:1000:
.fb_iframe_widget{display:inline-block;position:relative}.fb_iframe_widget span{display
.fb_customer_chat_bounce_in{animation-duration:250ms;animation-name:fb_bounce_in}.fb_cu
<body class="post-template-default single single-post postid-17 single-format-standard"
```

4

```html
<div class="pagewidth" id="pagewrap">
<div id="headerwrap">
<header class="pagewidth" id="header">
<hgroup>
<div id="site-logo"><a href="https://space-facts.com"><img alt="Space Facts" height="12
<div id="main-nav-wrap">
<div class="mobile-button" id="menu-icon"></div><nav>
<ul class="main-nav" id="main-nav"><li class="menu-item menu-item-type-post_type menu-i
<ul class="sub-menu">
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-827" id="n
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-826" id="n
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-825" id="n
<li class="menu-item menu-item-type-custom menu-item-object-custom current-menu-item me
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-828" id="n
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-829" id="n
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-830" id="n
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-831" id="n
<li class="menu-item menu-item-type-post_type menu-item-object-page menu-item-2695" id=
<li class="menu-item menu-item-type-post_type menu-item-object-page menu-item-2696" id=
</ul>
</li>
<li class="menu-item menu-item-type-post_type menu-item-object-page menu-item-has-child
<ul class="sub-menu">
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-832" id="n
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-833" id="n
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-2587" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-2739" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-2771" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-1340" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-2373" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-2374" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-2589" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-2588" id="
</ul>
</li>
<li class="menu-item menu-item-type-post_type menu-item-object-page menu-item-has-child
<ul class="sub-menu">
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3298" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-1793" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3301" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3450" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3628" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3317" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3629" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3323" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3329" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3514" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-3513" id="
```

```
</ul>
</li>
<li class="menu-item menu-item-type-post_type menu-item-object-page menu-item-has-chil
<ul class="sub-menu">
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-5091" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-5092" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-5093" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-5094" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-5095" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-5096" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-5097" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-5098" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-5099" id="
</ul>
</li>
<li class="menu-item menu-item-type-post_type menu-item-object-page menu-item-has-chil
<ul class="sub-menu">
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-1493" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-1347" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-1529" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-1513" id="
<li class="menu-item menu-item-type-custom menu-item-object-custom menu-item-1528" id="
</ul>
</li>
</ul>
</nav>
<div id="top-search"></div></div><meta content="40994c871d405312dfb519222232b26f" name=
<div class=" fb_reset" id="fb-root"><div style="position: absolute; top: -10000px; heig
var js, fjs=d.getElementsByTagName(s)[0];
if(d.getElementById(id)) return;
js=d.createElement(s); js.id=id;
js.src="//connect.facebook.net/en_GB/sdk.js#xfbml=1&amp;version=v2.3";
fjs.parentNode.insertBefore(js, fjs);
}(document, 'script', 'facebook-jssdk'));</script>
<div class="pagewidth clearfix sidebar1" id="layout">
<div class="widget widget_text oko" id="text-26"> <div class="textwidget"><center>
<div id="ad-responsive">
<script async="" src="//pagead2.googlesyndication.com/pagead/js/adsbygoogle.js"></scri
<ins class="adsbygoogle" data-ad-client="ca-pub-4251889121233823" data-ad-format="auto"
<script>(adsbygoogle=window.adsbygoogle||[]).push({});</script></div></center></div></
<h1 class="page-title">Mars Facts</h1>
<div class="left"></div><div class="right"></div></div><div class="list-post" id="conte
<article class="post clearfix post-17 type-post status-publish format-standard hentry
<span class="post-icon"><span class="post-icon-inner"></span></span>
<div class="post-content">
<div class="wp-caption aligncenter" id="attachment_1086" style="max-width: 636px"><img
<h2>Mars Planet Profile</h2>
<table class="tablepress tablepress-id-mars" id="tablepress-mars">
```

```
<tbody>
<tr class="row-1 odd">
<td class="column-1"><strong>Equatorial Diameter:</strong></td><td class="column-2">6,7
</td>
</tr>
<tr class="row-2 even">
<td class="column-1"><strong>Polar Diameter:</strong></td><td class="column-2">6,752 km
</td>
</tr>
<tr class="row-3 odd">
<td class="column-1"><strong>Mass:</strong></td><td class="column-2">6.42 x 10^23 kg (
</tr>
<tr class="row-4 even">
<td class="column-1"><strong>Moons:</strong></td><td class="column-2">2 (<a href="https
</tr>
<tr class="row-5 odd">
<td class="column-1"><strong>Orbit Distance:</strong></td><td class="column-2">227,943
</tr>
<tr class="row-6 even">
<td class="column-1"><strong>Orbit Period:</strong></td><td class="column-2">687 days
</td>
</tr>
<tr class="row-7 odd">
<td class="column-1"><strong>Surface Temperature: </strong></td><td class="column-2">-
</tr>
<tr class="row-8 even">
<td class="column-1"><strong>First Record:</strong></td><td class="column-2">2nd miller
</tr>
<tr class="row-9 odd">
<td class="column-1"><strong>Recorded By:</strong></td><td class="column-2">Egyptian as
</tr>
</tbody>
</table>
<div class="diagram-background" id="diagrams">
<h2>Mars Diagrams</h2>
<div class="wp-caption aligncenter" id="attachment_4837" style="max-width: 770px"><img
<h2>Facts about Mars</h2>
<ul>
<li><strong>Mars and Earth have approximately the same landmass.</strong><br/>
Even though Mars has only 15% of the <a href="https://space-facts.com/earth/">Earths</a
<li><strong>Mars is home to the tallest mountain in the solar system.</strong><br/>
<a href="https://space-facts.com/mars-features/#olympus">Olympus Mons</a>, a shield vol
<li><strong>Only 18 missions to Mars have been successful.</strong><br/>
As of September 2014 there have been 40 <a href="https://space-facts.com/mars-missions/
<li><strong>Mars has the largest dust storms in the solar system.</strong><br/>
They can last for months and cover the entire planet. The seasons are extreme because
<li><strong>On Mars the Sun appears about half the size as it does on Earth.</strong><l
At the closest point to the Sun, the Martian southern hemisphere leans towards the Sun
```

```
<li><strong>Pieces of Mars have fallen to Earth.</strong><br/>
Scientists have found tiny traces of Martian atmosphere within meteorites violently eje
<li><strong>Mars takes its name from the Roman god of war.</strong><br/>
The ancient Greeks called the planet Ares, after their god of war; the Romans then did
<li><strong>There are signs of liquid water on Mars.</strong><br/>
For years Mars has been known to have water in the form of ice. The first signs of tri
<li><strong>One day Mars will have a ring.</strong><br/>
In the next 20-40 million years Mars largest moon Phobos will be torn apart by gravitat
</ul></div><div class="contents"><a href="https://space-facts.com/mars/#facts">Facts</
<div class="widget widget_text oko" id="text-33"> <div class="textwidget"><center>
<script async="" src="//pagead2.googlesyndication.com/pagead/js/adsbygoogle.js"></scri
<ins class="adsbygoogle" data-ad-client="ca-pub-4251889121233823" data-ad-slot="8581451
<script>(adsbygoogle=window.adsbygoogle||[]).push({});</script>
</center></div></div><div class="yarpp-related"> <p></p><h2>Similar Facts</h2><p></p>
<div class="widget widget_search" id="search-2"><form action="https://space-facts.com/"
<sf-social-3 style="padding-left:8%;">
<iframe allowtransparency="true" class="twitter-follow-button twitter-follow-button" da
</sf-social-3>
<div id="sf-social-1">
<div class="fb-like fb_iframe_widget" data-action="like" data-href="https://space-facts
<div id="___plusone_0" style="text-indent: 0px; margin: 0px; padding: 0px; background:
<div id="ad">
<script async="" src="//pagead2.googlesyndication.com/pagead/js/adsbygoogle.js"></scri
<ins class="adsbygoogle" data-ad-client="ca-pub-4251889121233823" data-ad-slot="3665370
<script>(adsbygoogle=window.adsbygoogle||[]).push({});</script></div><div class="widget
<h3>Top Facts</h3>
<div class="widget popular-posts" id="wpp3">
<ul class="wpp-list">
<li><a href="https://space-facts.com/mercury/" target="_self" title="Mercury Facts"><in
<li><a href="https://space-facts.com/earth/" target="_self" title="Earth Facts"><img al
<li><a href="https://space-facts.com/mars/" target="_self" title="Mars Facts"><img alt=
<li><a href="https://space-facts.com/jupiter/" target="_self" title="Jupiter Facts"><in
<li><a href="https://space-facts.com/uranus/" target="_self" title="Uranus Facts"><img
<li><a href="https://space-facts.com/venus/" target="_self" title="Venus Facts"><img al
<li><a href="https://space-facts.com/saturn/" target="_self" title="Saturn Facts"><img
<li><a href="https://space-facts.com/neptune/" target="_self" title="Neptune Facts"><in
</ul>
<ul class="wpp-list">
<li><a href="https://space-facts.com/mars-curiosity-facts/" target="_self" title="Mars
<li><a href="https://space-facts.com/solar-system-information/" target="_self" title="S
<li><a href="https://space-facts.com/films-set-on-other-planets/" target="_self" title=
<li><a href="https://space-facts.com/the-moon/" target="_self" title="Moon Facts"><img
<li><a href="https://space-facts.com/the-sun/" target="_self" title="Sun Facts"><img al
<li><a href="https://space-facts.com/orbital-periods-planets/" target="_self" title="O
<li><a href="https://space-facts.com/jupiters-galilean-moons-profile-gifs/" target="_se
<li><a href="https://space-facts.com/pluto/" target="_self" title="Pluto Facts"><img al
</ul></div></div></div></div><div class="widget feature-posts" id="wpx-feature-posts-3"
<footer class="pagewidth clearfix" id="footer">
```

```
<div class="footer-widgets pagewidth clearfix">
<div class="col col3-1 first">
<div class="widget widget_text" id="text-40"><h4 class="widgettitle">Planets</h4> <div
<ul class="wpp-list">
<li><a href="https://space-facts.com/mercury/" target="_self" title="Mercury Facts"><ir
<li><a href="https://space-facts.com/venus/" target="_self" title="Venus Facts"><img al
<li><a href="https://space-facts.com/earth/" target="_self" title="Earth Facts"><img al
<li><a href="https://space-facts.com/mars/" target="_self" title="Mars Facts"><img alt=
</ul></div><div class="link-box"> <ul class="wpp-list"> <li><a href="https://space-fact
<div class="widget widget_tumblr_recent_photos" id="tumblr-recent-photos"><h4 class="wi
<div class="widget widget_text" id="text-36"><h4 class="widgettitle">More</h4> <div cla
<div class="pagewidth">
<div class="footer-text clearfix">
ĺ <a href="https://space-facts.com">Space Facts</a> 2018
| <a href="https://space-facts.com/privacy-policy/">Privacy</a> | <a href="https://spac
<script>(function(){
var po=document.createElement('script'); po.type='text/javascript'; po.async=true;
po.src='https://apis.google.com/js/plusone.js';
var s=document.getElementsByTagName('script')[0]; s.parentNode.insertBefore(po, s);
})();</script>
<div style="display:none"></div><script>window.WPCOM_sharing_counts={"https:\/\/space-:
<link href="//space-facts.com/wp-content/cache/wpfc-minified/f8fcaee0e0437125c2d9f601a7
<style id="lsi-style-inline-css">.icon-set-lsi_widget-2{text-align:left !important;}
.icon-set-lsi_widget-2 a,
.icon-set-lsi_widget-2 a:visited,
.icon-set-lsi_widget-2 a:focus{border-radius:2px;background:#000000 !important;color:#H
.icon-set-lsi_widget-2 a:hover{background:#cc3d00 !important;color:#FFFFFF !important;]
.lsi-social-twitter a:hover{background:#55ACEE !important;}
.lsi-social-facebook a:hover{background:#3b5998 !important;}
.lsi-social-gplus a:hover{background:#dd4b39 !important;}
.lsi-social-pinterest a:hover{background:#ce2029 !important;}
.lsi-social-tumblr a:hover{background:#35465c !important;}
.lsi-social-rss a:hover{background:#2bb24c !important;}</style>
<script src="https://s0.wp.com/wp-content/js/devicepx-jetpack.js?ver=201807"></script>
<script>
var mPS2id_params={"instances":{"mPS2id_instance_0":{"selector":"a[rel='m_PageScroll2ic
</script>
<script src="//space-facts.com/wp-content/cache/wpfc-minified/e7f1a84ac5e30e1d03c940bel
<script>
var ctcc_vars={"expiry":"30","method":"1","version":"1"};
</script>
<script src="//space-facts.com/wp-content/cache/wpfc-minified/e9ccc251c0a0a7cf741e4fab2
<script src="https://space-facts.com/wp-includes/js/comment-reply.min.js?ver=4.9.4"></s
<script src="https://space-facts.com/wp-includes/js/wp-embed.min.js?ver=4.9.4"></script
<script>
var sharing_js_options={"lang":"en","counts":"1"};
</script>
<script src="//space-facts.com/wp-content/cache/wpfc-minified/27d86dcf3f53b39f9f97ea28:
```

```
<script>var windowOpen;
jQuery(document.body).on('click', 'a.share-twitter', function(){
if('undefined'!==typeof windowOpen){
windowOpen.close();
}
windowOpen=window.open(jQuery(this).attr('href'), 'wpcomtwitter', 'menubar=1,resizable=
return false;
});
var windowOpen;
jQuery(document.body).on('click', 'a.share-facebook', function(){
if('undefined'!==typeof windowOpen){
windowOpen.close();
}
windowOpen=window.open(jQuery(this).attr('href'), 'wpcomfacebook', 'menubar=1,resizable
return false;
});
var windowOpen;
jQuery(document.body).on('click', 'a.share-google-plus-1', function(){
if('undefined'!==typeof windowOpen){
windowOpen.close();
}
windowOpen=window.open(jQuery(this).attr('href'), 'wpcomgoogle-plus-1', 'menubar=1,res:
return false;
});</script>
<script async="" defer="" src="https://stats.wp.com/e-201807.js"></script>
<script>_stq=window._stq||[];
_stq.push([ 'view', {v:'ext',j:'1:5.7.1',blog:'37359843',post:'17',tz:'0',srv:'space-f
_stq.push([ 'clickTrackerInit', '37359843', '17' ]);</script>
<script>jQuery(document).ready(function($){
if(!catapultReadCookie("catAccCookies")){
$("html").addClass("has-cookie-bar");
$("html").addClass("cookie-bar-bottom-bar");
$("html").addClass("cookie-bar-bar");
}
ctccFirstPage();
});</script>
<div id="catapult-cookie-bar"><div class="ctcc-inner"><span class="ctcc-left-side">We u
```

```
In [10]: #get the entire table
         table_data = soup.find('table', class_="tablepress tablepress-id-mars")

In [11]: #find all instances of table row
         table_all = table_data.find_all('tr')

         #set up lists to hold td elements which alternate between label and value
         labels = []
         values = []
```

```python
            #for each tr element append the first td element to labels and the second to values
            for tr in table_all:
                td_elements = tr.find_all('td')
                labels.append(td_elements[0].text)
                values.append(td_elements[1].text)
```

In [12]:
```python
#make a data frame and view
mars_facts_df = pd.DataFrame({
    "Label": labels,
    "Values": values
})
```

In [13]:
```python
mars_facts_df
```

Out[13]:
```
                   Label                        Values
0    Equatorial Diameter:                  6,792 km\n
1         Polar Diameter:                  6,752 km\n
2                   Mass:  6.42 x 10^23 kg (10.7% Earth)
3                  Moons:             2 (Phobos & Deimos)
4         Orbit Distance:      227,943,824 km (1.52 AU)
5           Orbit Period:          687 days (1.9 years)\n
6    Surface Temperature:                  -153 to 20 řC
7           First Record:              2nd millennium BC
8            Recorded By:           Egyptian astronomers
```

In [14]:
```python
# get html code for DataFrame
fact_table = mars_facts_df.to_html(header = False, index = False)
fact_table
```

Out[14]: '<table border="1" class="dataframe">\n <tbody>\n   <tr>\n   <td>Equatorial Diame

0.6 Mars Hemispheres

In [15]:
```python
# new url
usgs_url = "https://astrogeology.usgs.gov/search/results?q=hemisphere+enhanced&k1=targ

browser.visit(usgs_url)

usgs_html = browser.html

soup = BeautifulSoup(usgs_html, "html.parser")

# gets class holding hemisphere picture
items = soup.find("div",{"class":"collapsible results"}).find_all("div",{"class":"item

#setup list to hold dictionaries
hemisphere_image_urls =[]

for item in items:
```

```python
            img_main_url = "https://astrogeology.usgs.gov"+item.find("a")["href"]
            img_title = item.find("div",{"class":"description"}).find("a").find("h3").text
            browser.visit(img_main_url)
            time.sleep(2)
            img_soup = BeautifulSoup(browser.html,"html.parser")
            download_item = img_soup.find("div",{"class":"downloads"})
            hemisphere_item = {
            "title":img_title,
            "img_url": download_item.find("li").find("a")["href"]
            }
            hemisphere_image_urls.append(hemisphere_item)

    print(hemisphere_image_urls)
```

[{'title': 'Cerberus Hemisphere Enhanced', 'img_url': 'http://astropedia.astrogeology.usgs.gov,