

Designing Figures for a ScienceBite Article or Poster

Brian H. Lower, Ph.D.
The Ohio State University

Designing Figures for your ScienceBite Article or Poster

If you take your own photograph or collect your own data, which you then use for a figure in your ScienceBite article then you do NOT have to credit anyone else for your figure because its your property and so you **do NOT have to provide a citation.**

However, it is likely that you will NOT produce your own figures, but rather that you will use figures that are the property of someone else that have already been published in another journal article or newspaper article or on a website. It is acceptable for you to use these, however, you **MUST provide proper credit** to the person or publisher who first published your figure.

If you use part of a previously-published figure or photograph or table (but not the entire figure or table itself) you still **MUST provide a citation** for where you obtained the figure.

If you use all or part of an original figure or photograph or table AND modify it somehow for your ScienceBite article you still **MUST provide a citation** for where you obtained the figure.

The next few slides provides an example of how to go about selecting a figure, modifying it for your ScienceBite Article or Poster and then using it in your ScienceBite Article or Poster and how to properly cite your source.

Figures always have two parts:

1. The figure itself.
2. The figure caption. This will accompany the figure and describe the figure to the reader.

Figures may have a third part if you based your figure on a previously published source. If you did, you need to remember to include a citation:

3. Cite your source in your References section.

Let's say that I'd like to use the figure shown below for Figure 1 of my ScienceBite article or Poster. This figure was originally published in the Washington Post newspaper on November 5, 2013 and was designed by Patterson Clark.

The screenshot shows a web browser window displaying an article from The Washington Post. The browser's address bar shows the URL: `apps.washingtonpost.com/g/page/national/an-abundance-of-habitable-planets/557/`. The page header includes the Washington Post logo and navigation links for various sections like Politics, Opinions, Local, Sports, National, World, Business, Tech, Lifestyle, Entertainment, Jobs, and More. The main heading of the article is "Health & Science". Below this, there is a search bar and a navigation menu with links to "In the News", "Chris Christie", "Amanda Knox", "Helen Mirren", "Yelp", "Ben Bernanke", and "Super Bowl". A prominent advertisement for "Free Obituary Search" from `obituaries.ancestry.com` is displayed. The article title is "An abundance of habitable planets?" by Patterson Clark, published on Nov. 5, 2013. The introductory text states: "Data from the Kepler space telescope suggest that about a fifth of all sunlike stars in our galaxy are accompanied by potentially habitable Earth-size planets. The Milky Way might be home to 25 billion rocky worlds with liquid water. [Read related article.](#)" Below the text is a diagram illustrating the habitable zone. On the left, a yellow sun is labeled "Star". A dashed line represents the orbit of a planet, labeled "Planet". The diagram is divided into three regions: "Too hot" (left), "Just right" (center), and "Too cold" (right). The "Just right" region is highlighted with a blue gradient bar. Below the diagram, there are two paragraphs of text: "The habitable zone, or 'Goldilocks zone,' is the orbital distance from a star in which a planet's atmosphere allows water to exist in liquid form at the planet's surface. So far, that is the only known habitat supporting life." and "Some scientists theorize that on cold planets outside the habitable zone, life might exist where water is kept liquid through tidal heating or radioactive decay."

The Washington Post

Authored by Patterson Clark

This is the figure that I'd like to use, but its not exactly in the form that I'd like for my article and I'd like to modify it for my ScienceBite article or Poster.

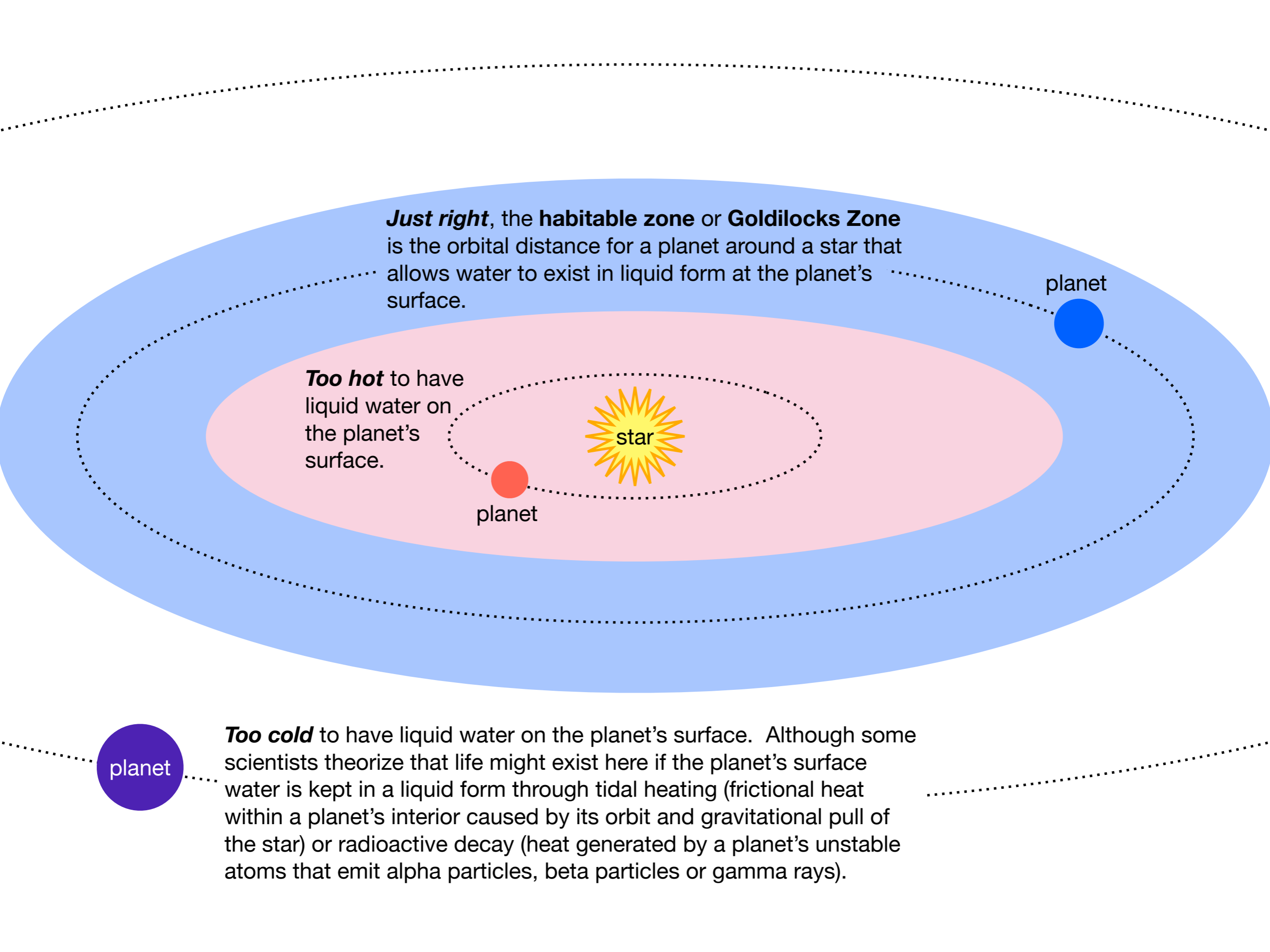
The next few slides show the figure that I designed using Apple Keynote. You can also use Microsoft PowerPoint or Adobe Photoshop. Use whichever software program you are most comfortable using.

You'll notice that my figure is partially based on the figure published by Patterson Clark in the Washington Post.

You'll notice that my figure has much higher resolution than the one from the Washington Post on the previous slide. You want to make sure that all of your figures are high resolution and of publication quality (this usually means **300 dpi; dots per inch**). You don't want them to be blurry or look unprofessional.

You'll also notice that my figure shown on the next slide takes up the entire slide and that it is centered. When you design a figure it is important that you ensure high quality, high resolution images (e.g., 300 dpi) and the best way to do this is to fill the entire slide with your image.

My figure also contains text. **If your figure contains text like mine, then you should use Arial, Helvetica, Avenir or Century Gothic font.** Do NOT use Times or Times New Roman because these fonts are often difficult to read.



Just right, the **habitable zone** or **Goldilocks Zone** is the orbital distance for a planet around a star that allows water to exist in liquid form at the planet's surface.

planet

Too hot to have liquid water on the planet's surface.

star

planet

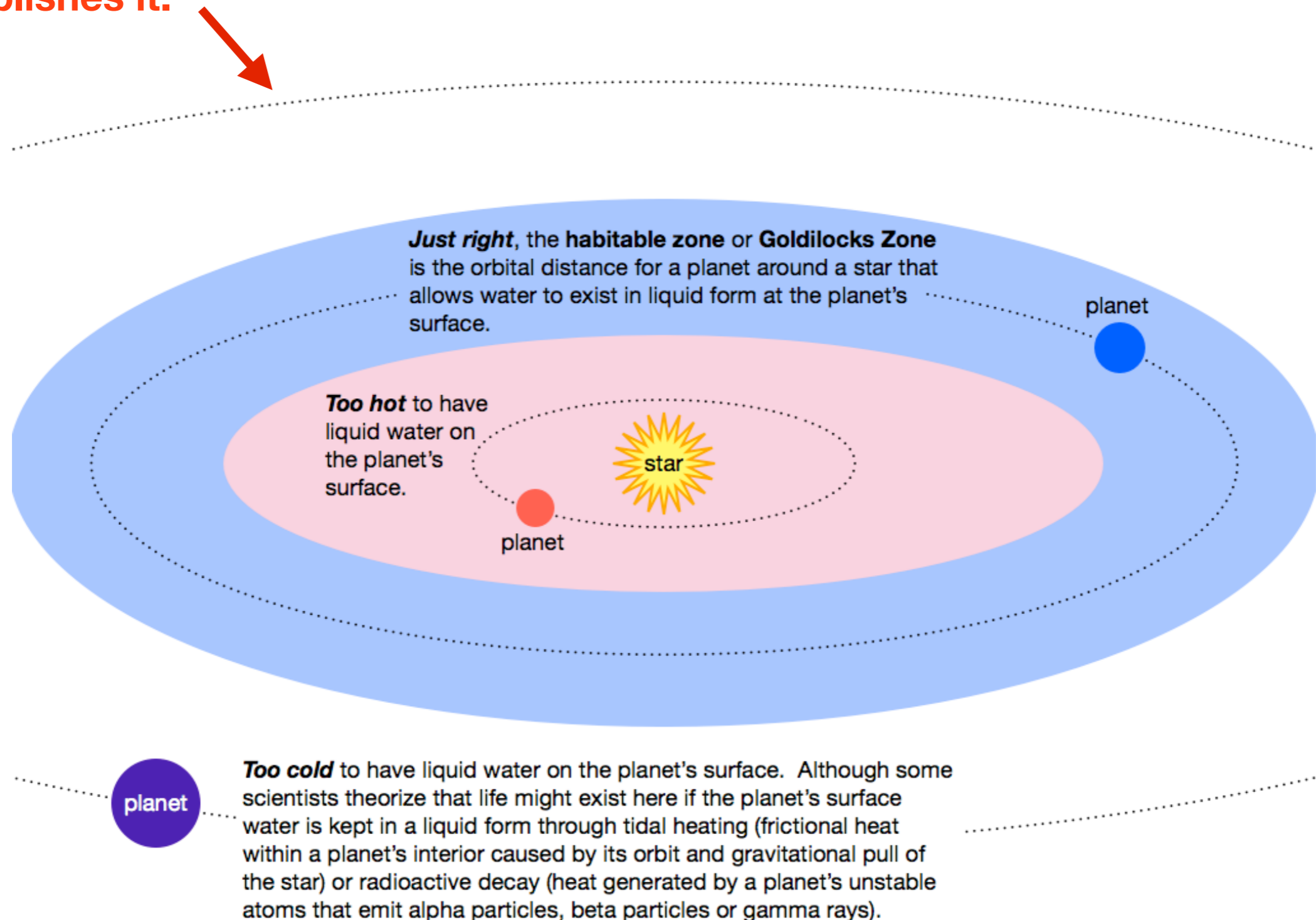
planet

Too cold to have liquid water on the planet's surface. Although some scientists theorize that life might exist here if the planet's surface water is kept in a liquid form through tidal heating (frictional heat within a planet's interior caused by its orbit and gravitational pull of the star) or radioactive decay (heat generated by a planet's unstable atoms that emit alpha particles, beta particles or gamma rays).

So now I have a publication quality figure that I'd like to use for my article. What I need to do next is save the figure as either a TIFF or JPEG file. Most publishers only accept TIFF or JPEG files. Make sure you save these images with the highest quality resolution possible.

I'm using Apple Keynote to design this figure. So to save it as a TIFF file I select File > Export > Images. You'll have a choice to save as a JPEG, PNG or TIFF file. Select TIFF and save this file to your desktop. If you choose to save it as a JPEG, make sure you select highest quality.

This is what my figure looks like as a TIFF file and this is the one that I want to use for my ScienceBite article or Poster. I've shrunk the size to fit on this slide. You'll notice that the resolution is very good (nothing is blurry) and you can easily read the entire figure. Its what is referred to as "publication quality" and this is good because an editor will want to see "publication quality" figures before she/he publishes it.



Now we need to write a figure caption that will accompany the figure.



Figure 1. The Habitable Zone. The mission of NASA Kepler Space Telescope is to search the Milky Way Galaxy for Earth-like planets that could support life. NASA scientists are searching for planets, which are the right distance from a star and therefore could have liquid water (the essential component for life on Earth) on its surface. Figure modified from P. Clark, Washington Post, Nov. 5, 2013.



The figure caption is also where we inform the reader that our figure is based on a previously published figure.

Finally we need to remember to include this citation in our references.

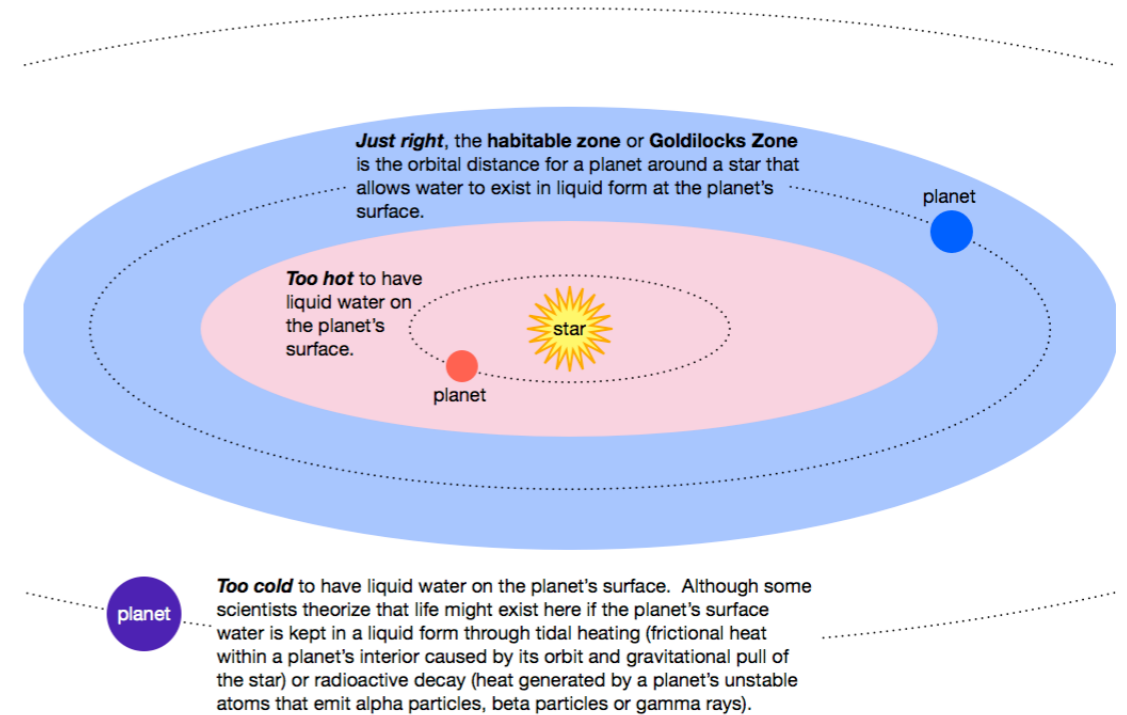


References

Clark, P. (November 5, 2013) An abundance of habitable planets. *Washington Post*. Retrieved from <http://washingtonpost.com>

So now I am done and I have all three parts for my figure:

1. Figure as a TIFF file.
2. Figure caption.
3. Figure reference.



2. Figure 1. The Habitable Zone. The mission of NASA Kepler Space Telescope is to search the Milky Way Galaxy for Earth-like planets that could support life. NASA scientists are searching for planets, which are the right distance from a star and therefore could have liquid water (the essential component for life on Earth) on its surface. Figure modified from P. Clark, Washington Post, Nov. 5, 2013.

3. Clark, P. (November 5, 2013) An abundance of habitable planets. Washington Post. Retrieved from <http://washingtonpost.com>