WorldWide Telescope
Ambassadors Program

Tour Do's and Don'ts

by Sanjana Sharma, Alyssa Goodman, and Pat Udomprasert

Planning your story	•DO reflect on why a non-specialist should care about your life's work. •DO think of the Tour as a mini-interactive movie with a plot and a focus. •What is your setting in time and space? •What is the background history? •What is the evidence that supports the story? •What is the conclusion that viewers should take away from your Tour? •DO some research to see where your chosen topic fits into the existing landscape of WWT tours.	•DON'T just present a string of facts without context. •DON'T just show pretty pictures without explaining what they are, how we know, and what makes them interesting.
Telling your story	•DO plan to iterate a few times between the "script" and the "storyboard" (the slides). •DO keep your script as lean as possible - a 5 to 6 minute Tour goes by fast! •DO narrate your Tour and use music - narration engages the viewer, and well-chosen music can provide the right atmosphere (and can conceal audio hiccups.) •DO label your slides and update your slide thumbnails so you can keep track of where you are in your story. •DO use on-screen text to •Label images and key features •Spell out key words in the narration •Include extra 'tidbits' of information not present in the narration (e.g. short notes about scale, distance, or time) •Add links and credits	•DON'T cram too much information into one Tour. You can always save extra material for follow-up Tours! •DON'T include too much additional on-screen text while the narrator is speaking. If you do want the viewer to look at/read something, make the slide long enough so they can absorb all the information.
WWT Tools	•DO experiment with all of WWT's tools and learn what's possible. •Use the sky (zoom, pan, rotate around) •Use multiple wavelengths and images as layers (and be sure to explain what they are) •Use the 3D solar system to model planetary motion, eclipses, transits •Highlight important features in an image, then zoom out to show where those features are in relation to one another •Play around with animation to illustrate tricky concepts •Try linking slides to create a truly interactive experience •DO spend some time watching exemplar Tours to learn what makes an effective Tour.	•DON'T overwhelm/ distract the viewer with too many fancy effects. (Think of an overdone Powerpoint talk). •DON'T make your viewers motion-sick. Fade in and out of images, pan gently, and try to adjust slide times and start/stop positions so the camera motion flows.

Illustrating your points	•DO show where an image is located in the sky, and what constellation it's in, to give your viewer a sense of space and scale. •DO describe what's in an image and key features to look out for. •DO highlight key features with arrows, rings, or boxes •DO explain why the image/feature is important •DO make sure that what you're talking about in the narration is what is actually being displayed on the screen	•DON'T allow text/ shapes to get lost against the backgrounds. Adjust the colors and opacity appropriately. •DON'T talk about a feature without showing where it is. (You may know what you're referring to, but the viewer probably does not).
Teaching the science	•DO use comparisons and analogies to put sizes, distances, and quantities into a frame of reference that can be grasped. •DO use images and animation to illustrate scientific concepts. •DO mention the wavelength of the observations and point out what you can learn at that wavelength that you can't from other wavelengths. •DO define terms, either in the narration, or as an on-screen note. •DO point out the evidence that supports your conclusions and describe the thought processes that led to your conclusions •DO point out possible limitations or questions concerning the story or data (in the narration or as a note)	•DON'T be afraid to show scientific graphs. Just be sure to explain clearly what the viewer should look for. •DON'T fudge facts to get a cleaner story, and DON'T gloss over important concepts. •DON'T use jargon words or acronyms without explaining what they mean.
Sharing your resources	•DO share your finished tours and resources with the WWTA community at wwtambassadors.org!	•DON'T be afraid to ask the WWTA community for feedback.

WWTA Tours Index & Search Scheme

Top Two Levels of Index & Search Scheme for WWTA Tours

WWT Tips and Tricks

Objects in the Sky
- Solar System - Ours and Beyond
- Stars and Their Evolution
- Between the Stars - Gas and Dust
- Galaxies
- Cosmology
- Exotic Objects

Astrophysical Concepts
- Light
- Scales in the Universe
- Physical Properties of Matter
- Changes with Time
- Big Theories in Physics

Scientific Processes and Skills
- How We Know
- Limitations to What We Can Know

Science and Society
- Current Research
- History of Science
- Cultural Influences and Perspectives
- Space Exploration

Popular Interests
- Beauty in the Night Sky
- Origins
- Space Exploration
- Exotic Objects and Events
- Collisions and Explosions
- For and By Kids

Night Sky Observing
- Constellations
- Finding Objects in the Sky
- Brightness and Magnitudes
- Telescopes and Technology

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Tour creation how-to's

by Pat Udomprasert, Jeremy Cushman, and Virginia Marcus

Creating a new WorldWide Telescope Tour

- Click twice on the **Explore** tab, point to **New**, and then click **Slide-Based Tour**.

or

- Click twice on the **Guided Tours** tab, select **Create a New Tour**.
- Enter a Tour Title and enter your name under Author Name.
- Click **Save**.

Editing an existing WorldWide Telescope Tour

- If you double-click the icon for an existing tour file outside of WWT, the tour will open in "**view**" mode. You can view the tour and pause it, but you won't be able to edit it.
- To change to "**edit**" mode, pause the tour.
- Click twice on the **Guided Tours** tab, select **Edit Tour**.

or

- Open the tour file from within WWT by clicking twice on the **Explore** tab.
- Select **Ope**n -> **Tour** -> choose your tour file.
- This will open the tour in "**edit**" mode.

Safe Area

- In the tour-authoring tab, be sure that "**Show Safe Area**" is checked (right under the "Tour Properties" and "Save" buttons).
- On wide-screen monitors, this will put transparent blue boxes on the left and right sides of the screen. These boxes indicate areas of the screen that may be cut off on other monitors. Avoid placing anything important (objects, images, text, etc) outside the non-blue "**Safe Area**."

Slide creation and manipulation

- Navigate to the place where you want your slide to begin. You can use the **Search** tab to search for an object.
- Return to the tour tab, and click **Add a Slide**.
- Navigate to the place where the next slide will be, return to the tour tab, and again click **Add a Slide**.
- Continue this process, making sure to click **Save** (in top-right corner) often.
- More advanced users can experiment with additional settings by right clicking on the slide. For example, you can specify an endpoint to a slide by right clicking on the slide and clicking **Set End Camera Position**.

  WARNING: Be careful to distinguish between **show** and **set** start/end camera position! It's easy to accidentally change the camera settings when you only meant to look at them.

  Another way to show the camera start/end positions is to use the triangles above the slide on the left and right.

Adding text

- Double-click on the slide that you want to add the text to (from the slide navigation at the top of the window). You must have already created the slide by clicking "Add a Slide" before you can add text.
- Click the **Text** button (in the top-right corner).
- Type some text, and select the proper color and font size. (It is better to change font size by using the font-size drop down menu rather than using the mouse to drag the text box to a larger/smaller size, which can cause pixelation.)
- Click **Save**.
- Move the text around the slide until it is in the correct position.

Adding shapes

- You can notate your slides with shapes, for example, pointing to key features with an arrow, or showing a telescope field of view with a ring.
- Double-click on the slide that you want to add the shape to (from the slide navigation at the top of the window). You must have already created the slide by clicking "Add a Slide" before you can add shapes.
- Click the **Shapes** button (in the top-right corner) and select the shape you want to add.
- Drag the shape around the window and stretch or resize it using the arrows.
- To change the color, right-click on the shape and select **Color/Opacity**. Choose a new color and click **OK**.
- To make a shape transparent, so you can see the background through it, right-click on the shape, and select **Color/Opacity**. Choose a new opacity level by typing in a number or clicking on the arrow and click **OK**.

Adding pictures

- You can include your own images, for example illustrations or graphs, to demonstrate key ideas.
- Double-click on the slide that you want to add the picture to (from the slide navigation at the top of the window). You must have already created the slide by clicking "Add a Slide" before you can add pictures.
- Click the **Picture** button (in the top-right corner) and browse for the file on your computer. Click **Open.**
- Drag the image around the window and stretch or resize it using the arrows.
- You can make an image transparent or overlay a new color on your image. See instructions in **Shapes** regarding **Color/Opacity**.

Animating shapes or images

- Position the object that you would like to animate with the correct starting position, size, color, etc.
- Right click on the object to be animated and click **Animate.**
- Show the end camera position of the slide by clicking on the small triangle above the right hand edge of the slide.
- Move the object to its new position. You can also change the size and color.
- To see if you got the direction right, you can toggle between the start and end camera positions by clicking on the triangles above the slide on the left and right.
- To see what the animation looks like, right click on the slide and click **Preview Tour From Here**.

Adding hyperlinks

- You can add a hyperlink to text, shapes, and images.
- Right-click on the object and choose select **Hyperlink.**
- Type in the Url.
- Note that Hyperlinks are only active when a tour is running (not when a tour is paused).
  - If a slide has a hyperlink, be sure the slide length is sufficient for someone to click on the link.
  - You might consider putting important hyperlinks on a very long slide (~30min) that will not progress until the viewer clicks on a "continue" button that is linked to the next slide.
  - (Frequent pauses like this can complicate use of background music. You would have to reattach the music file to a new master slide following the long linked slide. This restarts the music from the beginning, and it increases the size of the tour file by the size of the music file every time it's appended. We are working with the WWT team to brainstorm solutions to this problem.)

Master Slides

- A master slide maintains added content (audio, text, images, shapes) across a number of slides. This is most commonly used for music or narration, but can also be used to put an organization's watermark on the screen throughout the tour, for example.
- To turn an existing slide into a Master Slide, right click on the **slide thumbnail**, select **MasterSlide**.
- Everything you add to this Master Slide will remain in the tour until the audio runs out, the tour ends, or a new Master Slide is created.

Finder Scope

- In WWT, you usually right click on an object to bring up the FinderScope that identifies the object or provides options for researching the object.
- When editing a tour, "right click" has a different function. To bring up the FinderScope in tour-edit mode, click twice on the **Explore** tab and choose **Show Finder**.
- You can then drag the Finder Scope around the screen to the object of interest.

Adding narration

- There are two general ways to add narration.
  - You can create a separate audio file for each slide (This way can sound a bit jerky.)
  - You can create one audio file for the whole tour and then change the timing of the slides to correspond appropriately. (This way is a bit fiddly.)
- Outside WWT, open **Sound Recorder** (**Start** → enter "Sound Recorder" in Search box)
- When you are ready to start recording, hit the red circle.
- When you finish, hit the stop button (the black circle).
- Save the sound recording with an appropriate file name.
- Back in WorldWide Telescope, click on the slide that you want to add the narration to.
- Click **Browse...** under **Voiceover:** (in the top-right corner) and select the sound file you just saved.
- Adjust the length of the slide to match the length of the narration.
- Repeat the process for each slide you want to narrate.

- If using a single audio file, make the first slide a **Master Slide,** and attach the audio file to this Master Slide.

More Subtle Points on Tour Creation

Compiled from notes by Robert Fatland, Microsoft Research (Earth, Energy and Environment/External Research)

Labeling slides

Taking time to label slides in the thumbnail scrollbar is a very useful way of keeping track what happens where. (**Click on the slide, near the bottom to label it**). A complex pan involving a number of slides can use sequential labels 'Pan 1, Pan 2, Pan 3, Pan 3a, Pan 3b, Pan 4, Pan 5'. This can make clear what is happening, particularly if the thumbnails are either unclear or not up-to-date. That gets you to the slides you are working on faster.

You can update thumbnails by advancing a slide to the desired location (including appropriate images and shapes), right clicking on the slide, and clicking **Capture New Thumbnail**.

Condensing text

Related to text-based narration: I find that I can write the text in a very wordy way. Then playing it I realize there is not enough time to read it, let alone think about it. By iteratively throwing out words a slide caption can be reduced to a bare minimum to get the point across.

If it is not possible to crunch down the text: It might be better to take the longer concept and break it into a series of component slides.

Balancing tour pans against rendering limits

The point here is that your experience will suffer if you ask the interface to do too much at low bandwidth; be warned! A boringer Tour is better than a stuck Tour.

Fixing slide transitions: How to work with persistent overlay features

The problem solved here is that we often want to create a new slide at an end position (or insert one) but the dynamic objects are carried over into the copy and don't behave properly. So the trick is to Un-animate them when they are placed in the "continuation" location at the start of the slide (which may be at the end position of the new slide); now the animated object is no longer animated. Done properly it will persist from the previous slide to the second (new) slide in the correct spot. This is much easier than trying to recreate the object and fidget it into place. Once the continuation transition is smooth: This object can be Re-Animated. Going to the end of the second slide it is then moved to its terminal location and the transition and continuation is done. Etcetera.

Looking at time series data using animated graphics

An important feature of Tour authoring is the inclusion of time-based experience. For example a time series data chart, say a light curve for a star or water salinity in an estuary, can be pasted as a static image in a Tour. This static image, with time on the horizontal axis, can be animated using an animated object like an arrow. The arrow is pointed to the start of the chart at the start of the slide, then animated to the end of the chart at the end of the slide. It will make a linear transition on playback where the slide duration can be set to optimize 'getting the point of the chart'.