

# **The Zula Patrol: Mission Weather**

## **Guest Narrative**

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## The Zula Patrol: Mission Weather Guest Narrative

### Overview

*The Zula Patrol*, those colorful and energetic Galactic fact-gatherers, have been planet-hopping across the Solar System on their never-ending quest for knowledge, and they've finally landed on Earth to study the weather on our home planet. We can experiment right along with them and learn what weather is, how it works, what affects it, and how it affects us. This compact 1000 square foot exhibition is anchored by six free-standing installations that combine to create the colorful cartoon world of Zula. Captain Bula, Professor Multo, Space Pilot Zeeter, flying wonders Wizzy and Wigg, and Space Pet Gorga invite you to apply the scientific method as you explore the exhibits and learn all about clouds, precipitation, wind, temperature, and other weather phenomenon.



The wonderful Zula characters make their appearance through a combination of repurposed and custom media on monitors or as two-dimensional character cut-outs. Each of the free-standing installations is inspired by the colorful world of *The Zula Patrol*.



## **Guest Experience**

As soon as we step into *The Zula Patrol: Mission Weather* exhibition, we know we are someplace special. The interior design of the Patrol's colorful animated spacecraft provides the design scheme for the fun, free-flowing collection of informative gadgets that *The Zula Patrol* has set up to investigate Earth's weather. The placement of the free-standing modules allows us to move freely between them as we help the Zula Patrol with their research. The free standing elements, in no particular order, are:

### **Clouds:**

Professor Multo stands at a compact little research area and points up at a fluffy cloud-shaped sign that reads "Clouds." The cloud sign hovers above a colorful wishing-well shaped vesicle that has a narrow counter around its circumference. Inside the vesicle we can see and touch a cloud (well, a back-lighted swirl of water vapor anyway, but it's as close as we can get to a real cloud here). We can reach into the middle of the cloud and swirl our hands through it and make it roil and turn. From this simple contact (and with a little help from the Professor's didactic scribbling scattered around the countertop), we learn that a cloud is made of water but you can't stand on it because it's just tiny suspended water droplets in the air. Jutting out of the sides of the cloud-container are two peek-in viewers that look something like a binocular microscope eyepiece. These microscope-like gizmos afford us four different views of clouds. The first image shows a cloud as we might see it from the ground. The images then increase in magnification until we can

make out thousands of drops of water vapor. The last image is an extreme close-up of a single droplet where we can clearly see the bit of dust that the water clings to.

On the support columns of this mini-lab is an illustrated cross-section of Earth's atmosphere with the different (properly labeled) types of clouds at their appropriate height in the sky. Other objects like a kite, a bird, an airplane, and even the Zula Patrol's Space ship provide a clear reference of how high the different types of clouds can climb. Professor Multo's notations, comments, and doodles provide additional textual support to our observations and help explain more complex cloud-related ideas like humidity and lightning.

Within reach and waiting to be discovered are several flip panels corresponding to the different clouds represented in the cross-section. Under each panel is a photograph of the cloud along with a description of the weather conditions that might be associated with them, like temperature and precipitation, rather like a Fodor's guide to cloud weather.

### **Wind:**

Gorga, Wizzy and Wigg are our Zula hosts at this highly interactive target range where the wind rarely dies down. Here we can use a variety of devices to move the air. Springs support small figures of both Wizzy and Wigg above the tabletop, which is decorated with a simple dimensional scale model of a typical outdoor Earth landscape rendered in the animated colors of the show (this is a whimsical, representational landscape and not a hyper-realistic, professional model). There are several simple wind "targets" (in the scale of a garden gauge railroad) mounted to the tabletop including a small windmill which activates a light, little trees or artificial flowers, flags, a line of laundry, a weather vane, and, of course, an anemometer with a digital readout; all things that can be made to flutter, ripple, or spin when a breeze hits them. Along the outside lip are mounted a variety of

methods to trigger the air blasters, from a hand pump to foot bellows to a crank wheel. We can use the devices on the outside rail to blow air at the various targets to make them move. We can see the wind cause the light to trigger on the windmill and the readout to change on the anemometer, spin the windmill blades, blow the sparkling discs on the back wall, and even feel the gusts of moving air as they blow past us. Graphics along the outside rail help explain what wind is and where it comes from along with photographic examples of the wind in action.

### **Temperature:**

Guests can enter either one of two connected geodesic domes that reside beneath a spectral sign that reads: "Temperature" (the letters of the sign progress from the red "T" to the blue "E" at the other end). Both of the domes have clear panel "portholes," so parents who choose to stay outside can easily see their kids on the inside. There is a doorway leading into each of the domes. The red doorway has a sign nearby that reads "HOT" and the blue doorway reads, "COLD". The domes are connected in a variety of ways: the title sign, of course, straddles the two domes, there are PVC tubes snaking from one side to the other, and there is a low crawl tunnel that links the two domes internally. The less obvious link is the Zula-faced planetary orrery that appears above and is supported by the title sign. The sun shines down just to the left above the "Hot" dome, and then we see Mercury, Venus, Earth and so on to Neptune and finally Pluto to the right of the "Cold" dome.

The planets appear on the interior of the exhibit as well, in the guise of graphics that are clearly labeled with the planet's name along with its average temperature and distance from the sun.

Inside the red dome it is indeed hot while inside the blue dome it is cold (a portable air conditioner system cools the blue side, while the heat exhaust from the same device warms this red dome). Like a real Arctic weather station, there is a lot

of kid-friendly monitoring equipment inside the domes, like the three large thermometers right in front of us as we enter. One is a clock-dial type, the middle one is an oversized mercury thermometer, and the last is a digital readout version. They all display the actual current temperature inside their particular dome.

A counter top supports some simple interactive elements that are unique to each side of the exhibit. On the hot side, the counter supports two lamps pointing in opposite directions. One of them shines on a dimensional sphere that is skinned with thermal-sensitive material (like a mood ring). As you rotate the sphere, the material reacts to the heat of the lamp and changes accordingly, so you can directly see how our planet is warmed by the sun during the day, and then cools off at night, when the sun is shining on the other side.

The other lamp shines on a flat graphic of our planet Earth. The graphic has a digital thermometer embedded in the middle of the United States. There is a clear disc in front of the lamp that has four sections. One is simply clear, allowing the light to shine through. The others have opaque graphics including a cloud, a tree, and a night sky, complete with a crescent moon and stars. When you turn the disc, the graphics obscure the heat lamp, creating a shadow on the graphic and changing the digital readout of the thermometer. Through this simple device we see that the temperature of Earth is cooled by clouds, shade, and night (shade which is created on one side of Earth from the other side of Earth).

On the Cold side, the counter top activities are different. Here we see a field of snowballs coming out towards us from the Kuiper Belt. These sometimes graphic, sometimes 3 dimensional orbs grow in size as they sweep across the splash plate of the counter. The largest of these is a touchable, circular plate embedded into the counter clearly labeled "Pluto". The metal plate that represents Pluto is chilled from below, so we can see how cold the distant planets are.

There is a lightbox embedded in the table on this side with a spinning disc above it. The disc has a Zulean graphic of each of the planets around its circumference. Above each of the planet graphics is a perforated hole of a different diameter. These holes are scaled to the actual apparent size of the sun as seen from each of the planets. When you rotate the disc in front of the light, you'll see how big the sun appears in each planet's point of view. There are other supporting graphics around this device that show a conjectural view of the sun from each planet's surface, from the larger fireball in Mercury's sky, to the slightly brighter star that is the sun as seen from Pluto.

There are also several PVC pipe "talking tubes" that elbow their way to the other station. Through these tubes we can communicate with guests in the other dome, ask about the temperature at their end, and find out that the weather or temperature is different in different places.

### **The Weather Window:**

Space Pilot Zeeter has transformed the cockpit of her spacecraft into a fun weather interactive display: The Weather Window. There are two positions at the Weather Window "Cockpit", like a pilot and co-pilot station. The two stations work independently of one another, but are side by side so we can interact with the person next to us and make discoveries together. The front window of each position looks out onto a landscape scene where the mischievous Dark Truder and Traxie lurk.

The panel beneath each monitor contains three different knobs, dials or levers with pictographic markings. The first one is a mercury thermometer-shaped slider that has an iconic sun and snowflake where the numbers should be. The next device is a light box graphic rain gauge tube. The tube appears to be completely dry, half full of water, or nearly overflowing as we slide the control. The last dial shows the top

of an anemometer, with three half-round “cups” on the ends of three arms, rather like the lock wheel on a submarine hatch. Turning this dial, we choose one of three different pictures in a window above it: the first one shows a flag hanging limply from its pole. The second shows the flag fluttering in the breeze. The last one shows the flagpole bent nearly horizontal with the flag standing straight out.

When we adjust these three devices, and hit the “Go” button, a new weather scene is triggered based on the settings and Dark Truder and Traxie are affected accordingly and even describe what’s going on. We raise the temperature, for example, and see them swelter and sweat, and cry, “It’s soooo hot!” If we decrease the temperature, he shivers, his teeth chatter, and he finally freezes stiff. If we set the precipitation knob all the way up, we see it rain; try lowering the temperature, and it snows, burying both Truder and Traxie. Increase the wind, and the background trees sway. Take it all the way up, and you can blow Traxie off Truder’s head and clear off the screen. There are twenty-seven different combinations in all, and each one brings up a unique video and audio clip.

### **Multopedia (Technofrolics Spin Browser)**

Professor Multo’s most reliable book provides a content-rich, interactive media station that allows guests to scroll slowly or quickly, backwards or forwards through video clips that show a variety of weather-based programming. The visual content is bolstered by audio observations by our favorite Zuleans.

The information-packed tome rests proudly atop its pedestal, and is open to a page that covers several topics, each of which are depicted by both a title and a photographic representation. The book and pedestal are framed by a projection screen that is capped by the title, “Multopedia”. When we approach, there is a still piece of media on the screen, a single frame from one of the many informational clips contained within the pages of the Multopedia. Mounted to the pedestal beneath the open book is a free-spinning jog wheel that simply begs to be spun.

When we do, the image on the screen comes to life. We quickly realize that we can control the media with the jog wheel. We can fast forward and reverse the image, speed it way up or slow it way down, and watch how the image changes. As the clips advance from subject to subject, a correlating light or image on the face of the book lights up, so we can keep track of where we are and what we're investigating.

The clips cover many fascinating topics and range from ground-based films of a storm cloud gathering, rising, and bursting into a rainstorm to a simple animation of the water cycle, clearly showing how water from the Earth's oceans, lakes and rivers evaporates into the air, forms into clouds, then turns to rain that feeds the oceans, rivers, and lakes to start the cycle over again. We can watch a snowflake melt to water or see ice crystals forming as frost. We can watch cloud formations swirl in a satellite image of Earth and we can rewind and fast-forward again and again to investigate and understand the amazing phenomenon of weather.

### **Activity Center**

Finally, there is a Zula-themed activity table, where we can use fun table-top devices to create the sounds of weather. There is a wind machine, where the turn of a crank creates the gusting sounds of blowing wind; a rain tube that rotates on a pipe and simulates the soothing patter of falling rain, and a thunder tube (a tube with a long spring hanging from it), that allows us to create rumbling crashes of thunder.