

# THE WRIGHT STUFF



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# THE WRIGHT STUFF

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Publisher ..... J.R. Fisher  
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## CONTENTS

A VIEW FROM THE CATBIRD SEAT .....	3
J.R. Fisher	
SCIENCE REPORT .....	3
Elaine Pischke	
SECURITY REPORT .....	4
Spring Brooks	
VENUS, A PLANETARY PORTRAIT OF INNER BEAUTY .....	5
JPL/NASA	
FIREWORKS OVER MARS: THE SPIRIT OF 76 PYROTECHNICS .....	6
JPL/NASA	
COMPUTER OPERATIONS REPORT .....	7
John Troan	
DEEP SPACE NINE - "GHOSTS" .....	8
Brad McDonald	
ANSWERS TO MAR/APR PUZZLE .....	11
PUZZLE .....	12
U.S.S. Kitty Hawk Puzzle Book	
UPCOMING EVENTS .....	13



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**IMAGE - Featured Front Page**

Artist concept of lightning on Venus.. ESA via NASA/JPL.

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# A View From the Catbird Seat

By J.R. Fisher

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Summer is here at last and it is a beautiful one!

Last month at the summit, the *Kitty Hawk* received the Region One Hailing Frequencies Award with Distinction (again), the Region One Certificate of Appreciation (again), and for the first time, the STARFLEET Region One Best Bimonthly Newsletter Award for "The Wright Stuff". Congratulations to all! Especially John Troan for the newsletter. Well done, John!

It is con time again and it seems like there is one every month. I went to MobiCon last

month and had a good time but don't imagine I will make many more this year.

This may not get published in time, but I hope I can get some of you to help with Security at ConTemporal the 21st thru the 24th. Last minute change is leaving us shorthanded. Should be a great con!

Everyone should check their calendars to see if they have any free time on June 30th. We are trying to see how many we could get together for a visit to the new Museum of Science in downtown Raleigh that morning. *[Editor's note - apologies for missing the intended publish date for getting this out to all].*

I remind you that we do not have a meeting in August and that I have a family situation this summer which will probably keep me gone most of the summer after June.

Brad has informed me that the Kanki has requested our help this October for their Pretty in Pink event. He will confirm the date when it is solid. Great fun and Sushi!

Have a great summer and remember that you have "The Wright Stuff".

*Esse Quam Videri*

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## Science Report

By Elaine Pischke

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The Pres confesses he is a Trekker. He also admits to having a crush on Lt. Uhura since childhood. (*USA Today*, April 2012) Now let's see a little more support for NASA, admittedly a tough sell in this economy. However, this might help.

Who says NASA's work doesn't have practical applications? NASA scientists have created a drink called AS10 designed to protect astronauts from the high doses of radiation they are exposed to in space. Now preliminary studies here on Earth show that the drink is effective in reducing spots and wrinkles caused by sun damage. The drink is a mixture of exotic fruits, including acai, acerola, prickly pear, yumberry, grape,

green tea, pomegranate and Brazil's cupuacu. I think NASA may have found a way to fund the space program. At \$50 for a 25 oz. bottle, (about a 10 day supply, as only 2 oz. a day was needed to show results) I think NASA has a huge moneymaker on its hands. NASA should go into the juice business.

One doesn't generally think of steam locomotives when we think of high-tech, but that could change. A steam locomotive built in 1937 is being made over to run on biocoal. Biocoal burns cleaner than regular coal and is considered to be close to carbon-neutral. This train will be capable of speeds up to 130 mph and will travel on existing tracks. This is considered 'higher speed' but not 'high speed rail',

which is 150-220 mph and requires specialized tracks.

And finally, here comes more Trek tech. Hang in there you needle-phobes. The needle-less hypodermic is on the way. Medical engineers at MIT are perfecting the process, which uses high pressure to inject medication through the skin at the speed of sound. The device can fine-tune delivery of medicines though different skin densities (a baby vs. a wizened old-timer). The device will even be able to deliver powdered medications, vibrating them so they behave like liquids, which will be a huge boon in third-world applications where refrigeration is not available for liquid medications.

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# Security Report

## By Spring Brooks

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### HELIUM SHORTAGE!

Thanks, in part, to a 1996 law that has forced the government to sell off its helium reserves at bargain-bin prices, the country's stockpile of the relatively rare and nonrenewable gas could soon dwindle. Yes, helium. Party supply stores are already feeling the pinch as recent helium shortfalls have driven up the price of helium-filled balloons. But it's not birthday parties we should worry about. A severe helium shortage, experts say, would cause problems for large swaths of the economy, from medical scanners to welding to the manufacturing of optical fibers and LCD screens.

So how did we get to this point?

The United States set up a national helium program. In the 1960s, it opened the Federal Helium Reserve, an 11,000-acre site in the Hugoton-Panhandle Gas Field that spans Texas, Oklahoma and Kansas. The porous brown rock is one of the only geological formations on Earth that can hold huge quantities of helium. And the natural gas from the field itself was particularly rich in helium — a relative rarity in the world.

Because of a US military embargo against Germany that restricted helium supplies, the *Hindenburg*, like all German Zeppelins, was forced to use hydrogen as the lift gas. Helium use following WWI was depressed but the reserve was expanded in the 1950s to ensure a supply of liquid helium as a coolant to create oxygen/hydrogen rocket fuel (among other uses) during the Space Race and Cold War. Some of this gas was used in the world's first helium-filled airship, the U.S. Navy's C-7, which flew its maiden

voyage from Hampton Roads, VA, to Washington, DC, on December 1, 1921. The helium mass spectrometer was also vital in the atomic bomb Manhattan Project.

By 1996, however, the Helium Reserve looked like a waste. Blimps no longer seemed quite so vital to the nation's defense and, more important; the reserve was \$1.4 billion in debt after paying drillers to extract helium from natural gas. The Republican-led Congress, looking to save money, passed the Helium Privatization Act, ordering a sell-off by the end of 2014.

Worse, under existing law, the Federal Helium Reserve could run out of money to operate as early as mid-2013. When that happens, it will still have a large chunk of the world's helium supply locked in the reservoir — but no one will be able to access it.

A bill would revamp the Federal Helium Reserve program so that it doesn't shut its doors by the end of 2014. Instead, helium would be sold off more judiciously to preserve a steady supply until other domestic or international sources could be developed. Under the new law, the reserve would start selling helium at market rates to encourage private producers to extract more helium (or recycle the stuff).

So far, the USA is the largest producer of helium. Russia, Algeria and Qatar have all recently built processing facilities for helium. Canada, China and Poland are also thought to have potential reserves, according to the U.S. Geological Survey. Other facilities could well pop up if the prices rise; the key question is whether it will be an orderly transition or a chaotic scramble worldwide.

### HELIUM

Helium is the second lightest element and is the second most abundant element in the observable universe. Most helium in the universe is helium-4, and is believed to have been formed during the Big Bang. It was first detected during a solar eclipse in 1868. Most helium on Earth is a result of radioactive decay.

Helium is used in cryogenics (its largest single use, absorbing about a quarter of production), particularly in the cooling of superconducting magnets, with the main commercial application being in MRI scanners. Helium's other industrial uses -- as a pressurizing and purge gas, as a protective atmosphere for arc welding in processes such as growing crystals to make silicon wafers -- account for half of the gas produced. In scientific research, the behavior of the two fluid phases of helium-4, is important to researchers studying quantum mechanics and to those looking at superconductivity. For its low solubility in nervous tissue, helium mixtures are used for deep diving to reduce the effects of narcosis. For its inertness and high thermal conductivity, neutron transparency, and because it does not form radioactive isotopes under reactor conditions, helium is used as a heat-transfer medium in some gas-cooled nuclear reactors. The use of helium reduces the distorting effects of temperature variations in the space between lenses in some telescopes.

I actually saw a small plaque in the middle of Kansas commemorating the discovery of Helium. I thought it was strange at the time.

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# Venus, a Planetary Portrait of Inner Beauty

## From JPL/NASA

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[This is the JPL/NASA press release that goes with this month's cover image.]

A Venus transit across the face of the sun is a relatively rare event -- occurring in pairs with more than a century separating each pair. There have been all of 53 transits of Venus across the sun between 2000 B.C. and the last one in 2004. On Wednesday, June 6 (Tuesday, June 5 from the Western Hemisphere), Earth gets another shot at it - and the last for a good long while. But beyond this uniquely celestial oddity, why has Venus been an object worthy of ogling for hundreds of centuries?

"Venus is a fascinating yet horrendously extreme place all at once," said Sue Smrekar, a scientist at NASA's Jet Propulsion Laboratory in Pasadena, Calif. "Although the surface is hot enough to melt lead due to its runaway greenhouse atmosphere, in many respects it is Earth's twin [size, gravity and bulk composition]."

Venus is not only nearby, but its orbit brings it closest to Earth of all the planets. Which along with its bright atmosphere goes a long way toward making it the third brightest object in the sky (the sun and moon are one and two). Along with Smrekar and many other equally intrigued planetary scientists, you can add to the list of those studying the second planet from the sun the ancient Babylonians, who noted its wanderings in texts as far back as 1600 BC. And anyone who has ever sweated out a Pythagorean Theorem in school ( $A^2+B^2=C^2$ ) might find some

solace in knowing that Greek mathematician Pythagoras sweated out the orbits of Venus, eventually becoming the first to determine that what had been believed to be unique and separate evening and morning stars (as believed by the ancient Egyptians and Greeks), was actually just one object - Venus.

But for all that these ancient astronomers and their medieval contemporaries (including the Aztecs back in the 1500s) were able to deduce, no human had ever laid eyes on Venus as more than a bright dot in the sky until Galileo Galilei, who in 1610 was the first human to actually see Venus in various kinds of light. With his telescope, Galileo started cranking out Venetian discoveries, including how the planet changed its illumination phase just like the moon as it circles Earth. Galileo's telescope provided strong evidence that Venus goes around the sun, and not Earth, as most of his contemporaries believed.

After Galileo, Venus came under even more intense scrutiny, both scientific and fanciful. More than one astronomer (and science fiction author) theorized it was home to some type of life form. The thick, impenetrable clouds allowed them to imagine tropical environs with steady rainfall and lush vegetation.

With the dawn of robotic space probes, America's *Mariner 2*, built by JPL, became history's first interplanetary traveler when it flew past Venus on Dec. 14, 1962. All told, 45 missions targeting Earth's twin have been launched by the United States,

Russia (and former Soviet Union), and Japan. All this probing by astronomers and robotic explorers has found Venus to be replete with 900° F (500° C) temperatures in a carbon-dioxide-rich atmosphere with pressures equivalent to being half a mile below the ocean surface. It is not a particularly hospitable environment.

"If our research tells us anything, it is that while Venus is devoid of life, it should be anything but avoided," said Smrekar. "Throughout history, Venus has been one of the most studied and speculated-about celestial bodies in our sky, and the same truth will hold well after this transit is over. Venus is a remarkable world with many lessons for us about the climate and interior of Earth and Earth-like planets in other solar systems."

For those who want to know more, check out NASA's web page for all things Venus transit: <http://venustransit.nasa.gov/transitofvenus>.

If you're in the western Pacific, eastern Asia and eastern Australia, you'll get a great view of the entire event. North and Central America, and northern South America get the beginning of the transit (on June 5), but the sun will set before the event ends. Conversely, Europeans, as well as those watching in western and central Asia, eastern Africa and western Australia will get a glimpse at the tail end.

For information about NASA and agency programs, visit <http://www.nasa.gov>.

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# Fireworks Over Mars: The Spirit of 76 Pyrotechnics

## From JPL/NASA

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One month and a day after celebrating its independence with fireworks exhibitions throughout the country, America will carry its penchant for awe-inspiring aerial pyrotechnic displays to the skies of another world. Some pyrotechnics will be as small as the energy released by a box of matches. One packs the same oomph as a stick of TNT. Whether they be large or small, on the evening of August 5th (Pacific time), all 76 must work on cue as NASA's next Mars rover, *Curiosity*, carried by the Mars Science Laboratory, streaks through the Red Planet's atmosphere on its way to a landing at Gale Crater.

"We are definitely coming in with a bang - or a series of them," said Pete Theisinger, Mars Science Laboratory project manager at NASA's Jet Propulsion Laboratory in Pasadena, Calif. "You only get one shot at a Mars landing, and the pyrotechnic charges we are using are great for reliably providing instantaneous, irreversible actions like deploying a parachute or opening a fuel valve."

Explosive pyrotechnic devices predate the space age by about a thousand years. Around 750 A.D., people in China began stuffing an early form of gunpowder into bamboo shoots and throwing them into a fire. At some point, someone interested in taking this new discovery to the next level (probably also from that region), decided aerial explosions would be even cooler, and the "aerial salute" was born. Fireworks were also part of America's very first Independence Day in 1777.

Pyrotechnics, or pyromechanical devices, are a natural but highly-engineered extension of these early fireworks. Instead of a rocket's red glare and bombs bursting in air, the energy from these explosions is contained within a mechanism, where it is used to move, cut, pull or separate something. Controlled



One month and a day after America celebrates its independence with fireworks, a series of meticulously-engineered fireworks must operate for the *Curiosity* rover to safely reach the surface of the Red Planet as shown in this artist's concept. NASA/JPL-Caltech

explosions are a valuable tool to those who explore beyond Earth's atmosphere because they are quick and reliable.

"When we need valves to open, or things to move or come apart, we want to be confident they will do so within milliseconds of the time we plan for them to do so," said Rich Webster, a pyromechanical engineer at JPL. "With pyros, no electrical motors need to move. No latches need to be unlatched. We blow things apart -- scientifically."

Seventeen minutes before landing, the first 10 of 76 pyros will fire within five milliseconds of each other, releasing the cruise stage that provided the entry capsule (and its cocooned descent vehicle and the *Curiosity* rover) with power, communications and thermal control support during its 254-day journey to Mars.

"We have essentially three miniature guillotines onboard that, when the pyros fire, cut cabling and metal tubing that run between the cruise stage and the entry capsule," said Luke Dubord, avionics engineer for Mars Science Laboratory at JPL. "Then a retraction pyro pulls them out of the way. Along with that, we've got

six pyrotechnic separation nuts, which when fired, will actually accomplish the separation."

One hundred and twenty-five milliseconds later, two more pyros fire, releasing compressed springs that jettison two 165-pounds (75-kilogram) solid tungsten weights. These weights allow the entry capsule to perform history's first planetary lifting body entry (see <http://mars.jpl.nasa.gov/msl/mission/technology/insituexploration/edl/guidedentry>). A dozen minutes and one fiery, lifting-body atmospheric reentry later, another smaller set of tungsten weights is ejected by pyros to readjust the lander's center of mass for the final approach to the surface. A few seconds after that, the largest bang since the spacecraft separated from its Atlas rocket 254 days before is scheduled to occur.

"The Mars Science Lab parachute is the largest used on a planetary mission," said Dubord. "When folded up and in its canister, it's still as big as a trashcan. We have to get that folded-up chute out of its canister and unfolding in a hurry. The best way to do that is get it quickly away from spacecraft and out into the freestream using a mortar."

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# Computer Operations Report

## From John Troan

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The best way to do that, the engineers at JPL decided, was to include a pyrotechnic charge equivalent to a stick of TNT.

"When something like this goes off, it makes a lot of noise" said Dubord. "Of course, at 8.7 miles [14 kilometers] up and a little over Mach 1, over Mars, I doubt anybody will be there to hear it."

While the ejection of the parachute is the biggest pyrotechnic display during the crucial entry, descent and landing, it is certainly not the last. The landing system needs to be released from the backshell that helped protect it during entry. The sky crane's descent engines need to be pressurized, and the rover itself needs to be released from the sky crane, where it is lowered on tethers toward the surface. All told, there are another 44 controlled explosions that need to happen at exactly the right time and at absolutely no other time for *Curiosity* to touch down safely at Gale Crater.

"Excluding the parachute mortar, the total 'explosive' material in all the pyrotechnics aboard the spacecraft is only about 50 to 60 grams," said Webster. "That is about the same amount of combustible material in the air bag in your car's steering wheel. When you do the math, the amount of explosive material in each pyrotechnic is only about what you would get out of a pack of matches.

"The thing is, a pack of matches won't help you land on Mars....pyrotechnics will," Webster added.

The Mars Science Laboratory mission is managed by JPL for NASA's Science Mission Directorate in Washington. *Curiosity* was designed, developed and assembled at JPL. Caltech manages JPL for NASA.

A video about the challenges of the landing is online at: <http://go.nasa.gov/Q4b35n> or <http://go.usa.gov/vMn>.

More information on the Mars Science Laboratory / *Curiosity* mission is at <http://www.nasa.gov/msl>.

After not writing in the last couple of issues, I decided it was time to put together a few musings this month.

First up is the news that I've moved and am almost ready to list the townhouse I still own. After a lot of pricy sprucing up -- new blinds, new paint, new carpets -- I'm ready to get my money out of the place and save for the next home buy. In the meantime, I've settled into an apartment that ended up being close to the PNC Arena -- which should make getting to and from hockey games a lot faster.

NASA has a new game out -- Rocket Science 101 -- that lets players pick a NASA mission and one of three different skill levels for building a rocket to send the mission into space. NASA's Launch Services Program does the rocket selection and building for real missions, and is now letting the public share in the fun. RS101 is available for PCs from <http://go.nasa.gov/Mn28Nt> and for iPads at <http://bit.ly/Mn1xLr>. More information about LSP is at <http://go.nasa.gov/yg4U1J>.

July 1 marks the [golden anniversary of Kennedy Space Center](#). NASA has put together a special web site that shows the history of KSC, including a video that shows the key milestones -- <http://go.nasa.gov/y0VdRi>.

Used as the base for all the U.S. manned launches to date, from Project Mercury to the Shuttle Program, KSC is now being revamped to support future commercial manned launches and NASA's Orion capsule and Space Launch System heavy-lift rocket, both in the development stages.

The shell for [the first space-bound Orion capsule just arrived at KSC](#). It'll be outfitted with the heat shielding, avionics, and other subsystems before a test launch in 2014. This will get the Orion capsule 3600 miles above Earth, which is fifteen times the orbital distance of the space station and the farthest any spacecraft intended for human flight has gone since the last Apollo mission in December 1972.

The [SLS heavy-lift rocket passed a few milestones](#) in June:

- The core stage is now moving from concept to architectural blueprints, in preparation for the first test flight in 2017.
- The J-2X engine for the future second stage completed a full-duration test burn of 260 seconds at Stennis Space Flight Center in Mississippi. An earlier J-2 version was part of the Saturn rockets of Apollo.
- The first SLS hardware for the solid rocket boosters is now being processed by ATK in Utah for the first qualification test in 2013. These SRBs will be a five-segment version of the shuttle's four-segment version.

Farther out from Earth, *Cassini* has [found tropical lakes on Saturn's moon Titan](#) and returned data suggests that [Titan also likely has a layer of liquid water](#) under the icy shell.

Farther out yet, *Voyager 1* will be the first manmade object to leave the solar system. [Recent data shows](#) that the region around *Voyager 1* has a rise in galactic cosmic rays, a sure sign that the edge of the solar system is near.

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# Deep Space Nine - *Ghosts*

By Brad McDonald

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## ACT TWO

FADE IN:

EXT. SPACE DEEP SPACE NINE  
(OPTICAL)

The station seems to be having a normal business day, there are small ships docked to the station.

INT. OPS - WIDE ANGLE

All senior officers are present. Sisko is walking through, checking on the various stations and people.

SISKO

(moving, smiling)

I really like days like this. The station is busy, everything is running smoothly, no Cardassians, no Jem'Hadar & even Quark has been quiet. I won't feel so bad leaving for the Gallitep ceremonies, knowing that you will have it so easy.

He is now stopped near O'BRIEN's station and she looks up.

O'BRIEN

I think we pitiful "underlings" can manage without you. But you're forgetting an important factor in command, Murphy's Law.

SISKO

(mock surprise)

Don't tell me Murphy is studied by your people as well.

O'BRIEN

Murphy is a universal constant!

ODO

Whatever can go wrong, will.

BASHIR

And at the worst possible moment.

WORF

Affecting the most people possible.

Sisko smiles at his "lesson" and decides to add his own twist.

SISKO

The glass is neither half empty nor half full. According to Murphy, there's a hole in the glass and it will make a mess!

Everyone gets a good laugh out of the comment, but Worf is distracted by an incoming call.

ON WORF

He sets the controls and begins to sort out the signal.

WORF

(working)

I'm picking up an emergency signal, Sir. It's very faint but my scans show that it's coming from nearby.

SISKO (V.O.)

(o.c., concerned)

Can you get a fix on it?

Worf is busy with the board and doesn't look up.

WORF

(working)

Working on it.

(beat)

Seems to be coming from Bajor.

(beat, surprised)

It's a Cardassian signal!

ON ODO

ODO

(sarcastic)

And you thought this was such a good day...

OPS - WIDE ANGLE

Sisko is now standing over Worf's position, watching with interest as he works.

WORF

It appears to be coming from the Gallitep concentration camp!

ODO

Confirmed! The signal is now increasing in strength.

SISKO

Chief! See if you can raise Major Kira, she should be in the area.

O'BRIEN

(working)

Aye sir!

Bashir has moved to Sisko's side and poses a question.

BASHIR

You think that it's related to the ceremony preparations?

SISKO

I'm not sure, but she's down there and maybe she can find out what is going on.

O'BRIEN

No luck, sir. I can't raise her.

BASHIR

Coincidence?

SISKO

Mister Murphy is alive and well.



(beat, thoughtfully)  
Worf? Why don't you contact the Bajoran military, see if they can supply some answers. And have them locate Kira, she should be near Gallitep...

WORF  
(working)

Aye sir!

SISKO  
(to Bashir)

Maybe you better get your medical kit together, just in case.

#### INT. CAVERN

Kira is totally absorbed in her work on the computer. One of the workers interrupts with an announcement.

WORKER #1

Major! We've found a transmitter. It's activated itself, like the computer did.

#### CAMERA FOLLOWS ACTION

Kira forgets the computer for the moment and follows the worker to the transmitter.

KIRA  
(moving)  
When did it activate?

WORKER #1  
(moving)

I'm not sure. We just noticed it.

KIRA  
(moving)

Do you know what type of signal it is or what's being sent?

WORKER #1

We were hoping you could tell us.

#### CAVERN - NEW ANGLE

Before them is a piece of active electronic equipment.

KIRA

This is Cardassian... it could be sending to one of their ships or outposts.

(beat)

I better contact the military now. We may have a problem.

Kira taps her comm badge.

KIRA

Kira to Bajoran Command.

When no one responds, she tries an alternate approach.

KIRA

Kira to Deep Space Nine.

Now she is concerned and moves towards the cave entrance.

#### EXT. CAVERN ENTRANCE - LATE MORNING

Kira moves just outside the entrance and tries once again to contact someone.

KIRA

Kira to Sisko. Are you reading me?

SISKO (V.O.)  
(o.c.)

Major! We were beginning to worry about you. Are you all right?

KIRA

Just fine. We've just made a very important discovery here. It seems the Cardassians left a few souvenirs behind. The most important of which is a computer loaded with camp records. The amount of detail is incredible. We should be able to answer a lot of questions about what happened here...

#### INT. DEEP SPACE NINE - OPS - ON SISKO

Sisko is still standing close to Worf's position. It is obvious that

he is both relieved at her safety and curious about the discovery.

SISKO

Sounds fascinating, Major. We've been trying to reach you. There's an emergency beacon being transmitted from somewhere near your position. Do you know what its purpose is?

KIRA (V.O.)  
(o.c.)

I was just calling to see if you could tell me. I don't have a tricorder with me.

SISKO

So far, all we know is that it's Cardassian. How would you feel about a little help. I'll bet I could talk Odo into such a diversion.

#### EXT. BAJOR - LATE MORNING - CAVERN ENTRANCE

If there was any concern or tension, it is obviously gone now, Kira is relaxed and smiles at the thought of Odo assisting her.

KIRA

Sounds great. Will you notify the Provisional Government of the discovery? I think the area has a natural dampening effect on transmissions. It could be why the Cardassians used it.

ODO (V.O.)  
(o.c.)

That would explain why we couldn't locate you, but how is the distress beacon getting through?

Kira smiles at her friend's dilemma.

KIRA

I suggest you come down and find out yourself! Lock on my signal to establish a transporter site.

INT. DEEP SPACE NINE - OPS -  
WIDE ANGLE

ODO

Captain, can I take O'Brien with me? I think it would do him some good to exercise his mind a bit.

SISKO

And maybe go visit his family when you're finished with him?

O'BRIEN

Thank you sir. I'd like that.

SISKO

Don't mention it, Chief. Take any equipment you think you might need. I'll notify Bajoran authorities about our discovery and we'll let Odo work on that signal from here.

Odo jumps up and heads off to his new assignment with a bounce in his step. O'Brien watches and then looks at Sisko, shaking his head.

O'BRIEN

It's a shame he can't enjoy her company a little more, isn't it?

Sisko smiles at the ironic statement but makes no comment. Odo and O'Brien exit.

WORF

It seems our dull day has just been lost to a few interesting mysteries.

SISKO

So it would seem, Commander. Care to help resolve one of them?

WORF

I always enjoy a good mystery, sir.

EXT. SPACE - BAJOR

INT. BAJOR - CAVERN

Kira has returned to the main computer while Odo and O'Brien

work on other pieces of equipment. Several Bajorans are busy working at sorting out the various supply containers.

ODO

(working)

It would seem your assessment about this cave is correct. It has a natural shielding property. No wonder all of this went undetected for so long.

O'BRIEN

(working)

I've solved a piece of our puzzle. The Cardassians have a remote transmitter, located outside this cave, but it doesn't tell us why.

ON KIRA

Kira doesn't look up from the computer, she's engrossed in her work.

KIRA

(working)

It's probably little more than an S.O.S. If the inmates had rebelled successfully, the Cardassians had this room to fall back on.

(beat)

Real brave. They feared the poor, pitiful souls in this camp.

ODO (V.O.)

(o.c.)

It is consistent with their thinking and prior operations.

KIRA

(working)

Chief? I hope you've located all of the booby traps in here.

CAVERN - WIDE ANGLE

O'Brien looks back over his shoulder towards Kira. His level of confidence is not exactly overwhelming.

O'BRIEN

I think so. I'm running another sweep, just in case.

KIRA

Better hurry, the Bajoran Defense Forces will be here soon to get rid of these arms and munitions.

O'BRIEN

(working)

I'll get right on it!

Odo notices that Kira is wrapped up in the computer and that she has a rather determined look on her face. Odo moves over to talk to her.

TWO SHOT - KIRA AND ODO

Odo looks over Kira's shoulder and studies the readout.

ODO

What's so interesting? I've never seen you so engrossed in your work before.

KIRA

(working)

These are all the camp records, including the death records. I'm trying to locate the records of my mother.

(beat)

They should be here, but I'm having trouble locating them.

ODO

Small wonder, hundreds of thousands of people died here. Without some reference date or --

KIRA

(interrupting)

When we liberated the camp, I met an old man who said that she had died only a week earlier.

(beat)  
Evidently his memory  
wasn't very sharp...

ODO  
Understandable, con-  
sidering the conditions.  
Why don't you try a search  
by name.

Kira shifts uneasily in her chair  
and sighs in exasperation and  
turns to confront Odo.

KIRA  
The Cardassians didn't  
bother to list the victims by  
name, only the number  
they assigned them. I'm  
trying to locate a file for the  
numbers assigned to  
names.

Odo senses that Kira is going  
through a particularly difficult  
difficulty time and wants to help  
her.

ODO  
(quietly)  
Kira, if you need --

Odo is interrupted by the arrival of  
the Bajoran military. Kira looks up  
to discover the source of the noisy  
distraction.

KIRA  
Odo, will you attend to  
them? I don't want to stop  
now, I think I'm getting  
close.

Odo understands and agrees to  
the request, willingly.

ODO  
Of course, we can talk  
later.

Odo moves off, leaving Kira alone  
again.

ON KIRA

Kira is busy again, when we see a  
change of expression on her face.  
She stops work for a minute, then  
brings up one more piece of  
information and freezes.

KIRA  
It can't be! He'll never get  
away with it!

ON ODO - CAMERA FOLLOWS  
ACTION

Odo is engrossed in explaining to  
the Bajoran forces what needs to  
be removed and pointing out the  
more dangerous items, while  
moving deeper into the cavern.

BAJORAN OFFICER  
Will Federation personnel  
be, assisting us,  
Constable?

ODO  
Chief O'Brien has already  
removed the booby traps,  
but for now we will  
continue to check out the  
rest of the equipment.  
Report to Major Kira when  
you have finished.

The young officer nods in  
understanding.

BAJORAN OFFICER  
Understood, Lieutenant. I  
have a message for her.  
Could you tell me where  
she is?

Reluctantly, Odo agrees. He turns  
to point out Kira.

ODO  
(turning, pointing)  
She's right over --

Odo stops mid-sentence. Kira is  
gone!

Off Odo's reaction...

FADE OUT.

END OF ACT TWO

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Answers to Mar/Apr Puzzle --

- 1 . Byron; Spock (as Kollos); *Is There in Truth no Beauty?*
- 2 . Shakespeare; Kirk; *By Any Other Name?*
- 3 . Shakespeare; Picard; *The Defector*
- 4 . Shakespeare; Picard; *Encounter at Farpoint*
- 5 . John Masfield; Kirk; *The Ultimate Computer*
- 6 . Shakespeare; Kirk; *How Sharper Than a Serpent's Tooth*
- 7 . Dickens; Kirk; *Star Trek II: The Wrath of Khan*
- 8 . Shakespeare; McCoy; *Star Trek IV: The Voyage Home*
- 9 . Dickens; Data; *Devil's Due*
- 10 . Shakespeare; Lenore Karidian; *Conscience of the King*
- 11 . Walt Disney version of original by J.M. Barrie; Kirk; *Star Trek VI: The Undiscovered Country*

# Puzzle - Rules of Engagement

## From U.S.S. Kitty Hawk Puzzle Book

Y	N	N	Y	R	K	P	O	L	A	R	T	N	E	V	O	T
T	A	A	H	U	L	L	G	E	R	E	L	I	A	N	T	
L	C	L	O	A	K	I	N	G	D	E	V	I	C	E	H	S
E	E	U	S	R	H	E	N	H	N	N	Y	A	M	N	O	A
F	G	M	T	C	B	A	X	O	S	A	A	E	S	T	M	G
I	A	O	I	M	N	I	Z	H	N	U	G	L	B	E	A	E
R	N	R	L	T	A	L	T	K	O	A	L	N	O	R	A	D
E	O	R	E	N	A	I	N	A	G	R	O	A	A	P	O	E
C	I	O	A	R	R	A	N	N	N	R	T	M	M	R	N	W
H	P	W	T	P	U	D	E	D	I	L	I	T	H	I	U	M
A	S	U	O	O	G	F	M	O	L	A	Y	M	P	S	D	L
I	E	R	E	D	O	V	N	C	K	A	T	S	A	E	G	E
N	T	X	E	S	N	S	A	I	C	E	N	P	A	C	E	H
P	E	T	E	R	M	O	R	W	O	O	D	D	A	E	E	U
C	A	L	R	A	K	K	A	H	P	O	Y	U	A	C	N	L
S	U	N	L	A	M	P	H	A	S	E	R	A	R	U	H	U
R	U	O	M	A	N	I	T	E	R	R	O	R	I	S	T	S

Words can be found horizontally, vertically, diagonally, backwards, and/or forwards, and always in a straight line. Space, punctuation, and words in lower case aren't included.

- |   |  |   |
|---|--|---|
| CAPTAIN<br>CHILL<br>CLOAKING DEVICE<br>DEGAS<br>DILITHIUM<br>DOSE<br>ENTERPRISE<br>ESPIONAGE<br>EXEC<br>EXHORT<br>EYEBROW<br>FELT<br>FIRECHAIN<br>GRIMACE<br>HAKKARL<br>HELM<br>HOSTILE<br>HULL<br>ILIAD<br>KIRK<br>KLINGONS<br>KRYNN<br>LANDAU | LUSH<br>MAIN<br>MARAG<br>MBENGA<br>MCCOY<br>MORROW<br>NARAHT<br>NEUTRAL ZONE<br>NHOMA<br>NOGURA<br>NORAD<br>NUDGE<br>ORBIT<br>ORGANIAN<br>ORIONS<br>OVEN<br>PETER MORWOOD<br>PHASER<br>PODS<br>POLAND<br>POLAR<br>PORT | REGNANT<br>RELIANT<br>RETINA<br>ROMULAN<br>RUDE<br>RULES OF ENGAGEMENT<br>SATED<br>SLAY<br>SPINE<br>SPOCK<br>SULAMID<br>SUNLAMP<br>TERRORISTS<br>TINAMOU<br>UHURA<br>UNEASY<br>VASE<br>VENTRAL<br>VODER<br>YANK<br>SULU<br>SWAN |
|---|--|---|

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## Upcoming Events

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**Jul        7            4 p.m. Ship Meeting, Triangle Factory Outlet**

**Aug        --            no August Ship Meeting**

**10            Articles due for next *Wright Stuff***

**Sep        TBD            4 p.m. Ship Meeting, Triangle Factory Outlet**

**DON'T FORGET TO CHECK YOUR STARFLEET STATUS**

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***THE WRIGHT STUFF***  
**U.S.S. KITTY HAWK**  
**5017 Glen Forest Dr.**  
**RALEIGH NC 27612**