



# Chaos Game Days

# Nice to meet you

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Loves building **software applications**,  
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Why the world needs  
**Reliable and Resilient**  
**Systems?**

**WEATHER**  
Forecast for Tucson: generally fair, little change.  
Temperatures  
Yesterday: HIGH 74 LOW 35  
Year Ago: HIGH 55 LOW 39  
U.S. WEATHER BUREAU

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## Apollo Training Craft Explodes



VIRGIL I. GRISSOM  
... Veterans command pilot

EDWARD H. WHITE II  
... Spacewalk hero

ROGER B. CHAFFEE  
... Rookie astronaut

# ASTRONAUTS DIE IN FIERCE CAPSULE

## U.S. Signs Outer Space N-Treaty

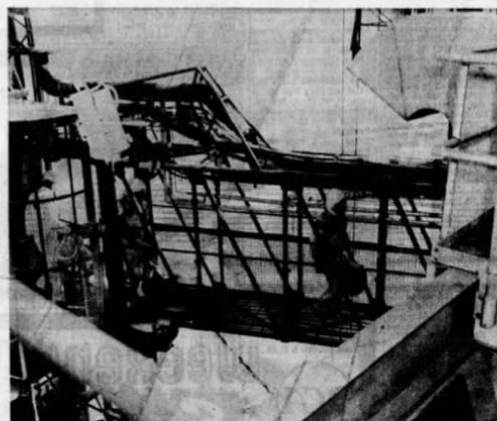
'Inspiring Moment'  
Hailed By Johnson

By MAX FRANKEL  
The Associated Press  
WASHINGTON — President John F. Kennedy presided yesterday over a White House ceremony at which the United States, the Soviet Union and 40 other countries signed a treaty to limit military activities in outer space.

Johnson hailed it as an "inspiring moment in the history of the human race" and described the treaty as a "first firm step toward keeping outer space free forever from the implements of war."

Similar ceremonies were held earlier yesterday in Moscow and London. But the treaty will not take effect until it is ratified by the U.S., the Soviet Union, Britain and two other governments. For most nations, that is a mere formality, but in the U.S. the Senate must give its consent by a two-thirds vote.

Eventual ratification is expected, because the treaty does not prohibit any present or planned American military activities in space. It prohibits the placing of nuclear weapons or other weapons of mass destruction in orbit, on the moon or on other celestial bodies. It also bans all military installations and maneuvers from the moon and other celestial bodies.



## Last Time Up The Gantry

Astronauts Virgil I. [Gus] Grissom [right] and Roger B. Chaffee are shown yesterday as they entered the Apollo 1 spacecraft where they met their fiery death. They and Astronaut Edward H. White II were killed several hours later in a flash fire. NASA officials had photographs last night of the burning capsule but would not release them. [AP Wirephoto]

## 3 Spacemen Trained In Arizona

The three Apollo astronauts killed last night had trained at several scientific installations in Arizona.

Beginning with the Gemini program, astronauts had spent many hours at Kitt Peak, the observatory southwest of Tucson on the Papago Reservation, at Lowell Observatory in Flagstaff and at the Grand Canyon.

Sites in northern Arizona were selected for features closely resembling the moon, including volcanic regions, lava flows, meteor craters and geological phenomena like the Grand Canyon.

They spent many hours at Kitt Peak Solar Laboratory, which was arranged to provide group observations of the moon for the astronauts.

Virgil Grissom did not make the early trip. Edward White insured the Kitt Peak area in 1964. Roger Chaffee visited Arizona in 1965, shortly after he was chosen to be one of the Apollo astronauts.

## Three-Man Crew Killed Instantly

CAPE KENNEDY, Fla., (AP) — The three Apollo 1 Astronauts were killed last night by a flash fire that trapped them aboard the huge spacecraft designed to take a man to the moon by 1970.

Locked behind sealed hatches and killed instantly just 218 feet above the ground were:

Air Force Col. Virgil (Gus) Grissom, a space pioneer and the first man to soar twice into the heavens; Air Force Col. Edward H. White II, first American to walk in space, and Navy Lt. Cmdr. Roger B. Chaffee, a rookie eagerly awaiting his first flight.

The three were hooked into a pure oxygen breathing system in their spacesuits and the oxygen fed the fire. Valiant pad workers trying to rescue the trapped men fell back one by one as they fought through dense, acid smoke toward the capsule.

Although the tragedy postponed indefinitely the Apollo 1's scheduled Feb. 21 blast off, space officials and President Johnson vowed to press ahead with the moon program despite the deaths.

"Three valiant young men have given their lives in the nation's service," Johnson said. "We mourn this great loss and our hearts go out to their families."

James E. Webb, administrator of the National Aeronautics and Space Administration, promised to pursue the program with renewed dedication.

"We in NASA know that their greatest desire was that this nation press forward with manned space flight exploration, despite the outcome of any one flight."

## Tragedy Will Hurt Program

By EVERT CLARK  
The Associated Press  
WASHINGTON — Last night's tragic accident at Cape Kennedy is expected to deal a serious blow to the Apollo program, which has struggled hard to stay on schedule in the face of annual budget cuts.

Some officials here warned



**GitLab.com Status**

@gitlabstatus

 Follow

We accidentally deleted production data and might have to restore from backup. Google Doc with live notes  
[docs.google.com/document/d/1GC...](https://docs.google.com/document/d/1GC...)

11:44 AM - 1 Feb 2017

  464  341



**Bartek Polanczyk**

@SzybkiSasza

 Follow

#aws #s3 is down! @cloudfront is down! The world is burning!

1:09 PM - 28 Feb 2017

  198  151

What is

**Chaos Engineering?**



# Chaos Engineering

It is deliberately **inducing** stress or **fault** into software and/or hardware as a way of **learning/verifying** things about systems.

<https://www.gremlin.com>



# GameDays

are events hosted to conduct **chaos experiments** in order to validate or invalidate hypothesis about a system's resilience.

<https://www.gremlin.com>





# Chaos Experiments

Are exercises to intentionally break or disrupt an application based on a hypothesis of **how you expect** that application to fail.

<https://www.gremlin.com>



# GameDays

provide teams with the  
opportunity to execute  
potentially highly disruptive  
experiments in a safer, more  
controlled way.

<https://www.gremlin.com>





## 2. PLAN

Fill format  
Slack channel  
Zoom room  
Agenda  
Calendar  
Datadog Dashboard

## 1. WHO

- Master of disaster
- First aid
- Team



## 4. POSTMORTEM

Document  
Action



## 3. SCALATION

- Run the attack
- Analyze
- Solve
- Action

# Who



**Master of Disaster**



**First on-call**



**Team**

<https://www.pinterest.es/pin/82429953802164573>

# Plan

- Create a public #gamedays **slack channel**
- Create an **agenda** for the GameDay
- Create a **calendar** invite for the GameDay
- **Fill a chaos experiment form**
- Create a **datadog dashboard** for the GameDay
- Ensure team have access to software required for the GameDay

# Plan

Application Name	<b>Finer</b>	Observa bility	<b>DataDog</b>
Hypothesis	<b>Circuit Breaker works</b>		
Environment	<b>My Home</b>	Results	
Duration	<b>5 - 10 seconds</b>		
Load	<b>1 request</b>		
		Actions	



# Execution: The Game starts!



The **Master of Disaster** decides  
in secret a type of failure.

The **Master of Disaster** declares  
"start of incident" and  
attack!!!

# Execution . . .



One member of the team acts as **First On-Call** and attempts to see, triage, and mitigate the impact of the failure.

# Execution . . .



The **team** understands, analyzes and solves the issue. It happens in less than 75% of the time.

The **Master of Disaster** will reverse the failure and the team proceed **to do a post-mortem**.

# Postmortem

Application  
Name

**Finer**

Observa  
bility

**DataDog**

Hypothesis

**Circuit Breaker works**

Environment

**My Home**

Results

**Facing latencies > 5 seconds  
between dashboard\_api and  
smart\_api to open the  
circuit.**

Duration

**5 - 10 seconds**

Load

**1 request**

Actions

**Issue #4356  
Configure the proper hystrix  
parameters according the  
results.**

**Implement a fallback.**

Automate ... Please!!!

# GameDay ToolBox

