A Universe in the Metaverse…
Real People, Real Feelings

California Institute of Technology
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Charles White
In talking about the impact of ideas in one field on ideas in another field, one is always apt to make a fool of oneself.

- Richard P. Feynman
I want to take you into my WORLDS...

But first a few disclaimers
Disclaimer #1a...

I did not call myself the Space Pope.

The Players of EVE Online gave me that title...
Once I dressed up as the Pope, what was done was done!

Disclaimer #1b: The opinions here do not reflect the views of the game company CCP hf, an Icelandic company that creates EVE Online.

Not my fault!
Disclaimer #2…

I am speaking today as a private citizen

Neither the U.S. Government, NASA, JPL nor Caltech shall endorse or recommend any commercial products, processes, or services.
I am a Burning Man Builder/Artist

As a private citizen I have participated with my own radical self expression at Burning Man.
Ok with all that out of the way… let’s go!

I live in multiple worlds at the same time…
The Worlds Collided…

BLACK ROCK OBSERVATORY
MARS ROVER ART CAR
CHARLIE THE UNICORN
THE 747

BURNING MAN
Art

NASA/JPL
Science

VIRTUAL WORLDS
Community

SECOND LIFE
CALTECH/MICA
EVE ONLINE
Space Pope

FLIGHT PROJECTS
MARS MISSIONS
INSTITUTIONAL SUPPORT
VIRTUAL TO REALITY
KNOWLEDGE MANAGEMENT
People have amazing passion for space sciences!

The joy in a person’s face when they see Jupiter or Saturn through a telescope with their own eyes was exhilarating!

The money they spend to go on astronomy/space related vacations to see stars or watch a rocket launch is a metric of that passion.
They would stand in line for over an hour.

People would walk over a mile to get to the observatory in the far reaches of the playa.

Others became volunteers to help!
Virtual World: Second Life…
"I'm disabled and I see maybe 2 people a year visit my apartment, but in Second Life, I meet and know hundreds."

-Paradox Olbers
Virtual World + JPL: Second Life...
My ‘untraditional’ experiments in Virtual Worlds...

Second Life to real world JPL facilities
Earth Science Center, JPL Building 264
Second Life to real world JPL facilities

“Build it!”
-Charles Elachi

“You can’t feel blueprints”
-Anonymous Reviewer
Virtual World: EVE Online...
EVE Online…

Is now a major part of my life!
One game: 19 years ongoing (persistent universe)

Contains 7,805 star systems (each with planets & moons)

Players control the economy and the outer rim areas

Multiple Guinness world records achieved

Millions of players over the years (20,000+ online right now)
THE CAPSULEER
Each person flies one ship of various sizes.

We use Discord as our ‘radio communications’

The recordings you are about to hear… actually came from real game play!

‘Max Singularity’
(Before becoming Pope)
WOW

Shaking hands...

I was there feelings...
EVE is more than a game!

It crosses into the real world.
Virtual Worlds: EVE Online and the real fashion world
New York Fashion Week 2011...

Nicola Formichetti

Portraying the man who modernised Mugler
Virtual Worlds: EVE Online + Art
What is the most expensive item that you have sold at auction or commission?

Hrm... probably $7,500 for a private commission I did for an Eve player who runs his own company back in 2016.

It's a large piece that no one but him has seen.

Ofc, except those that have visited his office.

$5,000 once for three pieces.

Rest are various under that.

Can I feature the three pieces?
One of three...
Sold for $5,000
Two of three...
Sold for $5,000
Three of three...
Sold for $5,000
One of one…
Sold for $2,500

But why would anyone pay for these?

A) Because it is worth it to them.

I can ask… why do pay so much for a vacation trip?

A) Because it is worth it to you… for the experience!
MoMA Museum of Modern Art...

Video Wall exhibit about EVE Online

New MOMA exhibit embraces the art of video games as it explores their design
By Brian Crecente / @crecenteb | May 4, 2015, 10:30am EDT

Eve Online exhibit to become a permanent fixture at New York’s Museum of Modern Art

(Also: An exhibit at the London V&A Museum)
Virtual Worlds: EVE Online & academia...
EVE: Online as a Potential Microeconomic Model

Christopher Smith

Economics, University of California, San Diego

Abstract
EVE: Online (EVE) is a video game that simulates virtual economies. This paper presents a model of virtual economies, focusing on the economic interactions within the game. The paper discusses the role of supply and demand, prices, and market equilibrium in virtual environments. It also explores the impact of player behavior on market outcomes and the implications for real-world economies.

Introduction
EVE: Online (EVE) is a video game that simulates virtual economies. It provides an opportunity to study the behavior of players and the forces that influence market outcomes. The game environment is characterized by a high degree of supply and demand, with players interacting as buyers and sellers.

Virtual Warlords: An Ethnemethodological View of Group Identity and Leadership in EVE Online

Osendar Misk

Abstract
EVE Online grants individuals the anonymity and freedom to act in any way they wish, going so far as to encourage and reward in-game criminal behavior toward other players. This design might lead some to expect anarchy within this digital universe. Instead, this virtual world is highly ordered, containing large organizations led by powerful leaders. To gain understanding of how such social structures operate, the project observes speeches made by heads of organizations in EVE Online to determine the categorization tools used to maintain order in a potentially chaotic environment. It finds that by focusing on group identity, leaders emphasize their role and responsibility for creating and maintaining organizational culture.

Additionally, by crafting a narrative of territorial conflict and their own role as a warlord and military leader, they encourage ruthlessness on the part of their membership and establish a social system based upon the individual leader.
Virtual Worlds: EVE Online and citizen science…

Human Protein Atlas & Exoplanets

Virtual Worlds

Covid-19
Virtual Worlds and citizen science

What if crowd sourcing and gaming could make the world a better place?

Dr. Mayor discovered the first ever exoplanet in 1995

京都賞受賞の科学者、ドクター・ミシェル・モエアール。
The project is a collaboration with:
- British Columbia Cancer Research Centre
- Reggio Emilia School of Medicine
- University of Pennsylvania
- University of Modena
- McGill University

There are 426,000 players participating in the Covid-19 mini-game right now, and they have completed 1.8 million analysis tasks since the project’s launch in June 2020.
Virtual Worlds: Community…
Virtual Worlds: EVE Online Charity...
Virtual Worlds helping the real world…

Plex for Good

2005 - $25,326 – Southeast Asia (Tsunami)
2010 - $34,350 – Haiti (Earthquake)
2010 - $38,900 – Pakistan (Monsoon)
2011 - $44,600 – Japan (Earthquake and tsunami)
2011 - $32,900 – United States (Hurricane Irene)
2013 - $190,890 – Philippines (Typhoon Haiyan)
2015 - $103,650 – Nepal (Earthquake)
2020 - $107,454 - Australia (Bushfires)
2020 - $135,550 - Global (COVID-19)
2022 - $501,652 – Ukraine (War)

A total of $1.2 Million USD raised by EVE Online players and CCP through PLEX for Good
Virtual Worlds are bringing people together...

Human interaction theory
4 things needed to establish a strong social connections that lead to friendship

Friendship = Proximity + Frequency + Duration + Intensity
In a virtual world... its real people, and real feelings.
These are my worlds...

- **BURNING MAN**
  - Art
- **NASA/JPL**
  - Science
- **VIRTUAL WORLDS**
  - Community

**Black Rock Observatory**
**Mars Rover Art Car**
**Charlie the Unicorn**
**The 747**

**FLIGHT PROJECTS**
**MARS MISSIONS**
**INSTITUTIONAL SUPPORT**
**VIRTUAL TO REALITY**
**KNOWLEDGE MANAGEMENT**

**Second Life**
**Caltech/MICA**
**EVE Online**
**Space Pope**
We are all seeking a better future

Some of us are sharing a common reality

In virtual worlds of real people, and real feelings
Cosmic Explorations
with Charles White

A Universe in the Metaverse...
Real People, Real Feelings

Thank you!