

The background is a solid black field. On the left and right sides, there are large, curved, semi-transparent shapes that overlap the black background. These shapes contain horizontal stripes of color, transitioning from dark blue at the top and bottom to a bright yellow in the middle. The stripes are slightly blurred and have a soft, ethereal quality. The main text is centered in the black area.

FROM DEPRESSION TO ACTION

Exploring interactive storytelling
for space sustainability awareness.

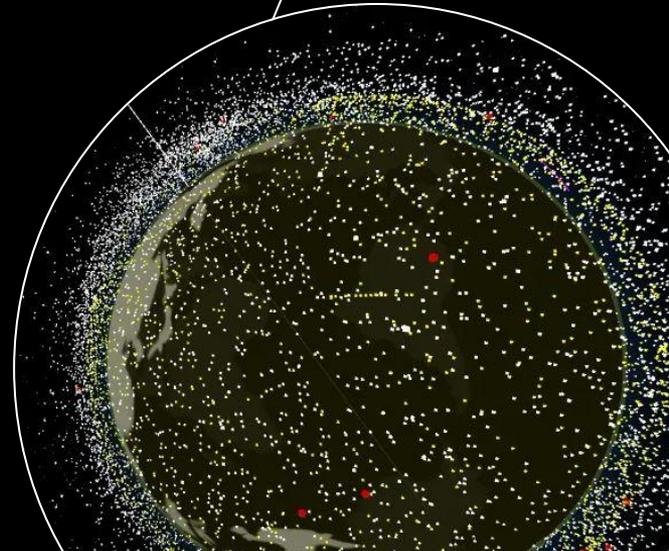


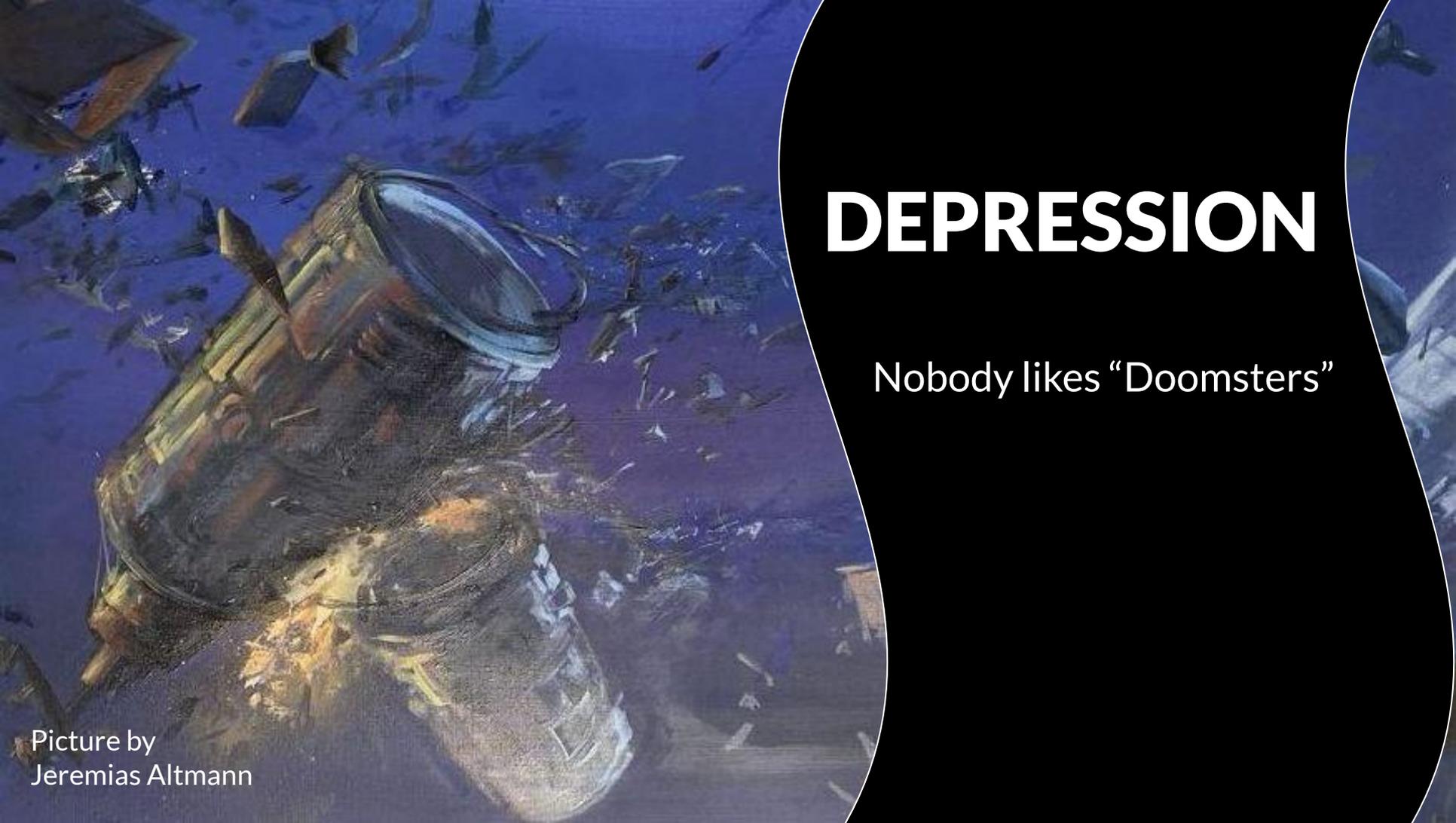
JULIANA NEUHUBER
INES HÄUFLER

Authors and Scriptwriters

**“The threat of the
Kessler Syndrome
is an absolute
conversation killer
at every party.”**

So, how to deal with that
and still create awareness?



A painting of a broken glass bottle, possibly a beer bottle, lying on its side in a dark, stormy environment. The bottle is shattered, with many sharp fragments flying through the air around it. The background is a dark, swirling blue and purple, suggesting a storm or a chaotic scene. The lighting is dramatic, highlighting the sharp edges of the broken glass and the texture of the bottle's surface.

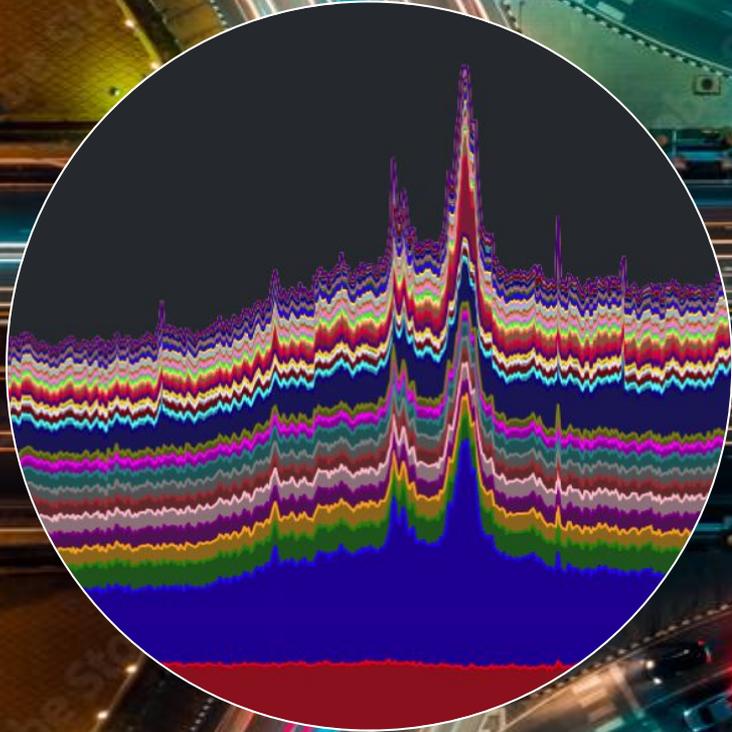
DEPRESSION

Nobody likes “Doomsters”

Picture by
Jeremias Altmann

PATH of SOLUTION

With our BEST PRACTICE EXAMPLE
for science based decision making.





Space Traffic Reports for Orbital Management

STROM



THE
IMPRESSIVE
COMPANY

SPACE ANALYSES

co-funded by the ESA GSTP programme

Daily Conjunctions <5km for GEO, MEO and LEO

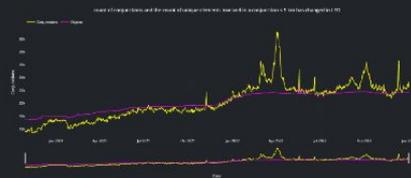


Three charts show the daily count of conjunctions happening in each orbital area:
 LEO: 200km - 2,000km
 MEO: 2,000km - 35,000km
 GEO: > 35,000km

Interactive Chart



Daily count of conjunctions <5km in LEO vs count of unique involved elements



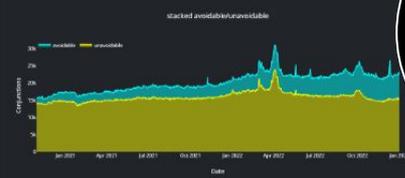
This chart allows a comparison of conjunction count and (in the conjunctions) involved unique objects. This visualization enables following insights of developments over time:

- A metric of interactivity of the objects
- A correlation of the number of objects in space vs their interactivity as an expression of risk making

Interactive Chart



Daily Conjunctions <5km in LEO categorized by avoidable and unavoidable



An object is categorized as non-maneuverable if matches the following criteria:

- older than 7 years
- size categorization SMALL

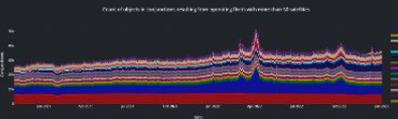
A conjunction is categorized as unavoidable if both objects are assumed non-maneuverable. This is an approximation, as there is no catalogue for propulsion systems status available for Space Analyses.

Interactive Chart

STEP 1 DASHBOARD

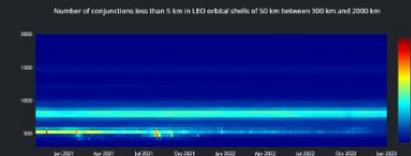
DATA BECOMES INFORMATION

Daily Conjunctions <5km with objects categorized by object groups with more than 50 elements.



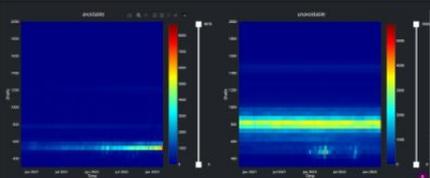
Commercial or institutional operators with a high number of objects in orbit carry the biggest burden on sustainability in outer space. The number of conjunctions and their percentage of the total 'traffic' can show impact on sustainability in outer space and the resulting endangerment of the resilience space of services available on the ground.

Daily Conjunctions <5km in LEO, Heatmap chart for 50km orbital shells between 300km and 2000km



The heatmap chart visualizes the dynamics of space traffic in different orbital heights. The slider on the righthand side allows to increase and decrease the contrast of the visualization by defining the thresholds for the heatmap (blue: low traffic, red: many conjunctions). When hovering over the chart with the mouse, following values are displayed:
 x: Date
 y: midpoint of orbital shell
 z: number of conjunctions in orbital shell

Daily Conjunctions <5km in LEO, Heatmap chart for 50km orbital shells between 300km and 2000km categorized by avoidable and unavoidable



The heatmap chart visualizes the dynamics of space traffic in different orbital heights. The slider on the righthand side allows to increase and decrease the contrast of the visualization by defining the thresholds for the heatmap (blue: low traffic, red: many conjunctions). When hovering over the chart with the mouse, following values are displayed:
 x: Date
 y: midpoint of orbital shell
 z: number of conjunctions in orbital shell
 An object is categorized as non-maneuverable if matches the following criteria:

- older than 7 years
- size categorization SMALL

A conjunction is categorized as unavoidable if both objects are assumed non-

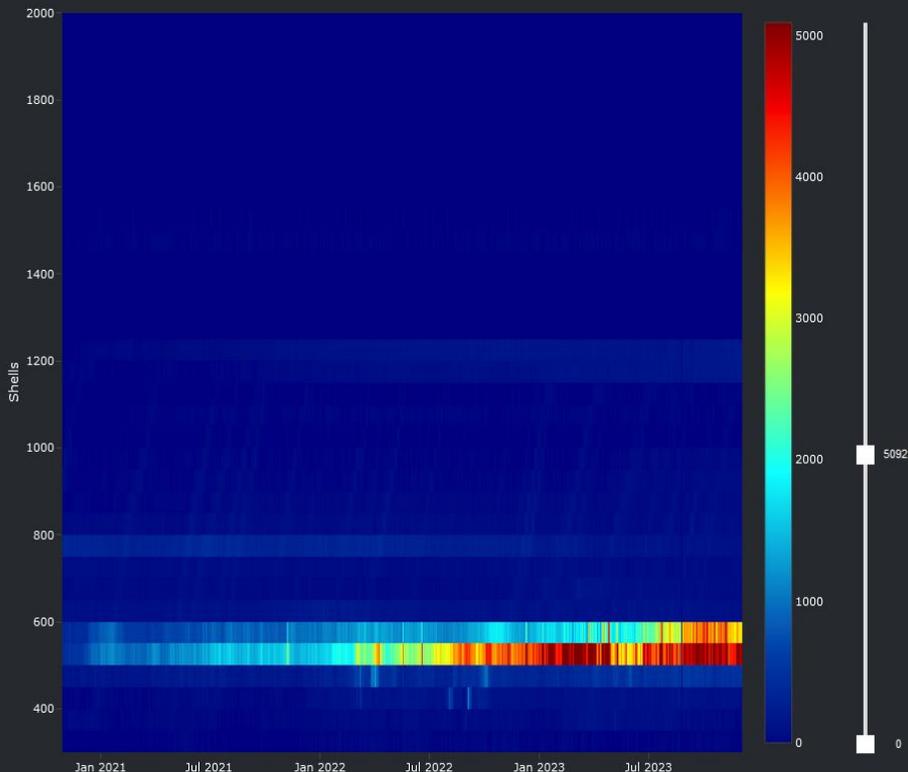
Number of conjunctions <5 km in LEO orbital shells of 50 km between 300 km and 2000 km

from: 01/01/2020

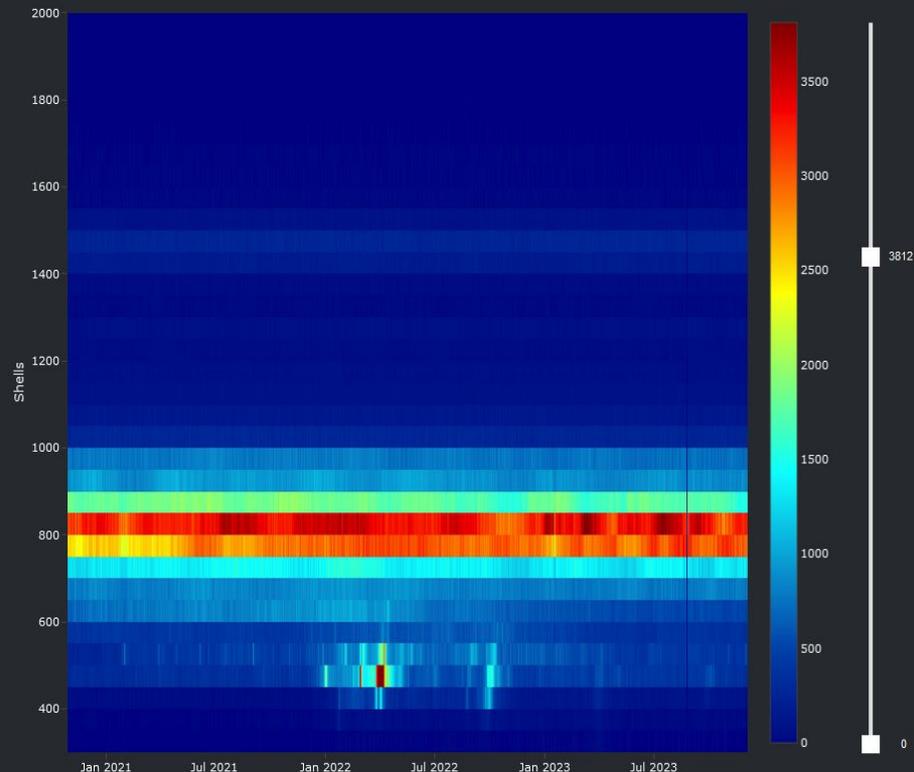
to: 12/12/2023

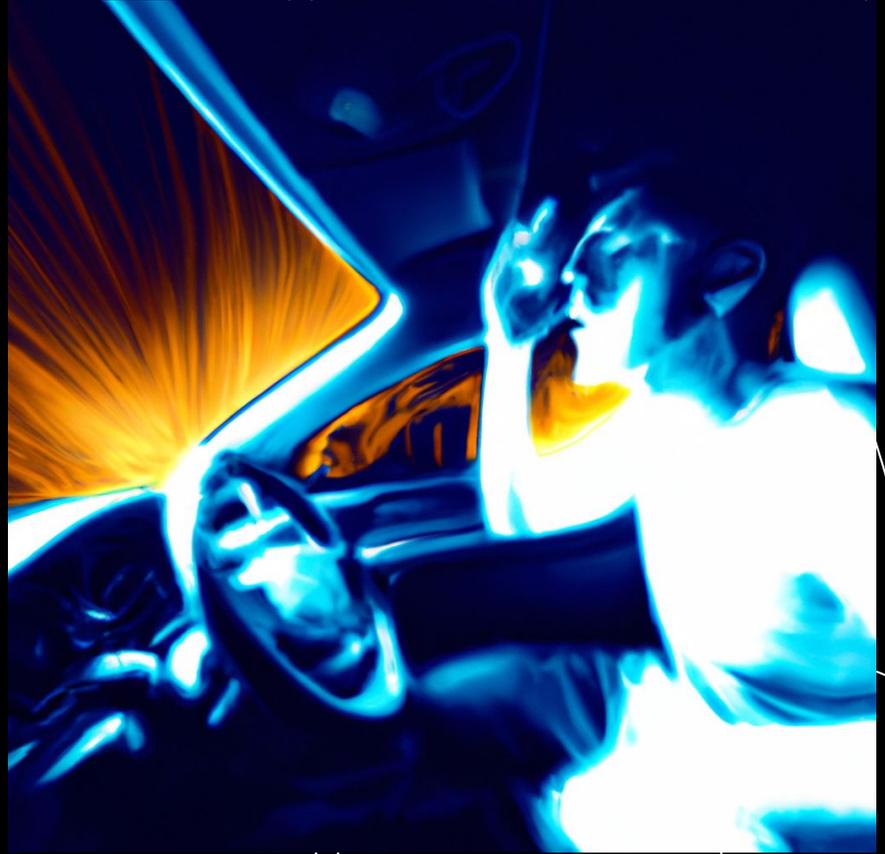
**INFORMATION
BECOMES
KNOWLEDGE**

avoidable



unavoidable







STEP 2

Spacef(I)ght VR

*Impressive Company & Space Analyses
Visuals by Josef P. Wagner*

*Exhibitions in Brussels, Darmstadt, Danzig
and Vienna at EDA, ESA/ESOC, DEFIS, ESPI,
WIA Europe, POLSA and UNOOSA.*



**KNOWLEDGE
BECOMES
a STORY**



23.09.2023 05:38:50 UTC SPD: 26286 km/h ALT: 913 km

***“THANK YOU
for feeling the
APOCALYPSE”***



STEP 3 LOCKED & LOADED



PARADOXICAL INTERVENTION

In paradoxical intervention, you are asked to wish for or do exactly what you are afraid of.

**POWERFUL
PEOPLE
CHANGE
THE WORLD**



CONCLUSION

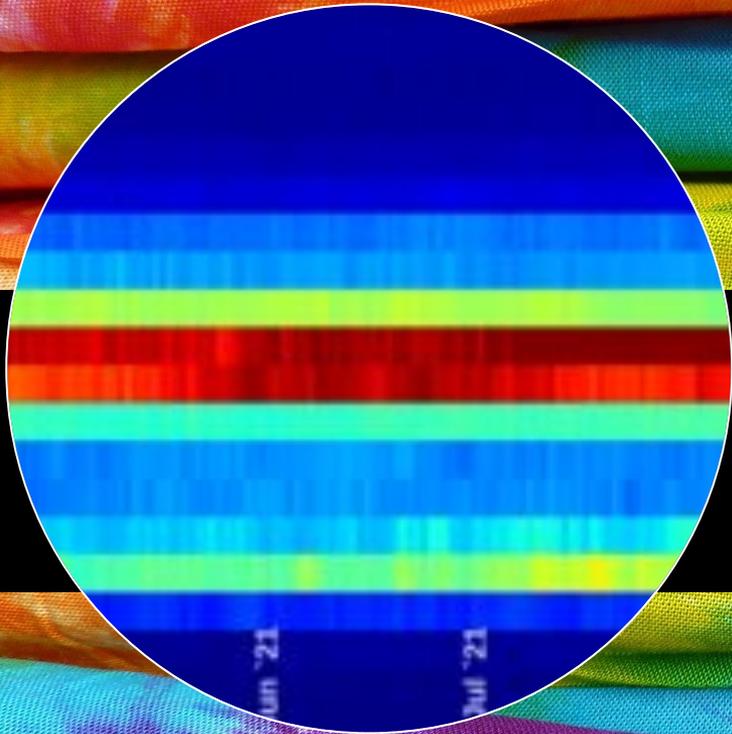
Find your:

ANALOGIES

FITTING MEDIA

PARADOXICAL
INTERVENTION

COOPERATE
with
STORYTELLERS
& ARTISTS

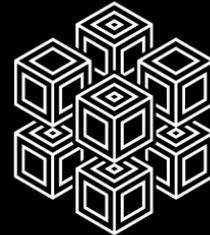


***“Because sometimes
it needs art to make
science tangible.”***

THANK YOU.

Presentation: Juliana Neuhuber & Ines Häufler

Panel Discussion: Juliana Neuhuber & Johanna Kivalo



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