Rover 9000

E. Béguet, A. Heuvels, C. Janßen,
M. Schamberg, P. Voigtlaender

RWTH Aachen University

26. März 2013

Outline

- Introduction
- Gameplay
- Graphics
- Physics
- Content Creation
- Video
- Live Demo

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Introduction

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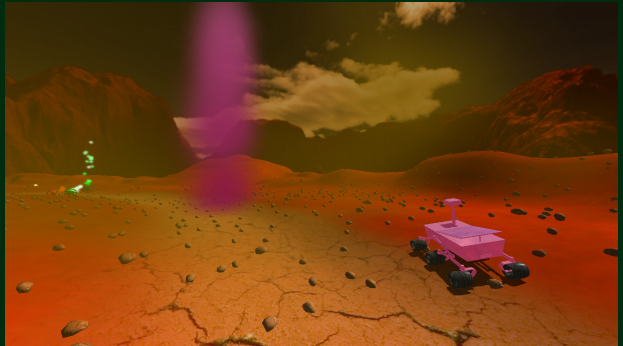E. Béguet, A. Heuvels, C. Janßen, M. Schamberg, P. Voigtlaender

Gameplay

Features

- Checkpoints
- Respawn
- Powerups
- Meteorites
- Camera
- Hot-Seat Mode
- AI
- Ranking

Checkpoints

Gameplay

Features

- Checkpoints
- Respawn
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- Meteorites
- Camera
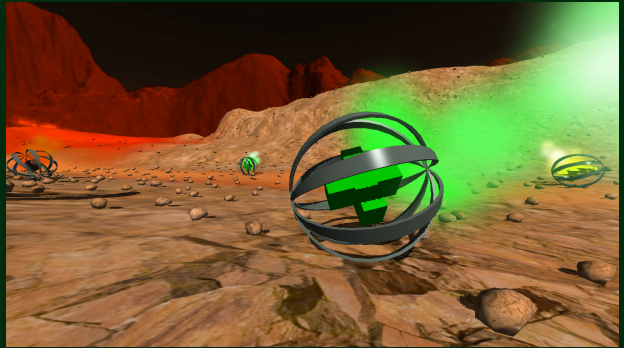- Hot-Seat Mode
- AI
- Ranking

Respawn

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Gameplay

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Powerups

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Meteoites

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Gameplay

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Camera

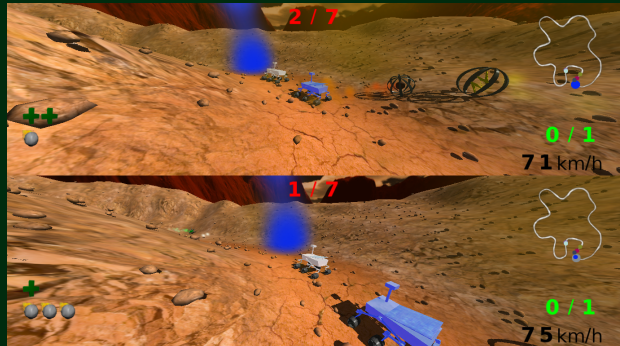Adaptive position depending on the car's movement

Gameplay

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Gameplay

Features

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- AI
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AI

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Gameplay

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Ranking

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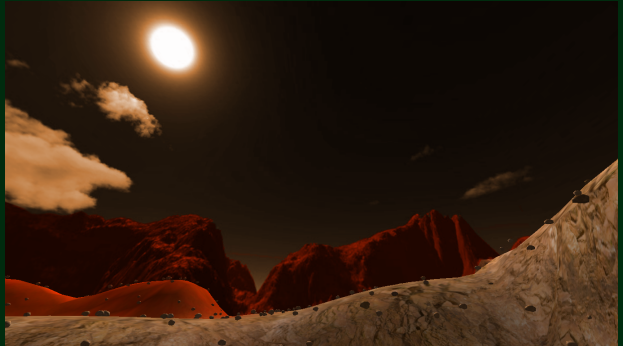E. Béguet, A. Heuvels, C. Janßen, M. Schamberg, P. Voigtlaender
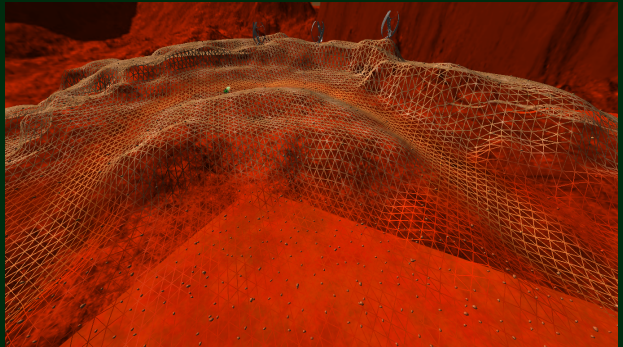
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Graphics

Features

- **Skybox**
- Heightmap
- Tileable Textures
- Instancing
- Shadow Mapping
- Split Screen
- GUI

Skybox

Graphics

Features

- Skybox
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Heightmap

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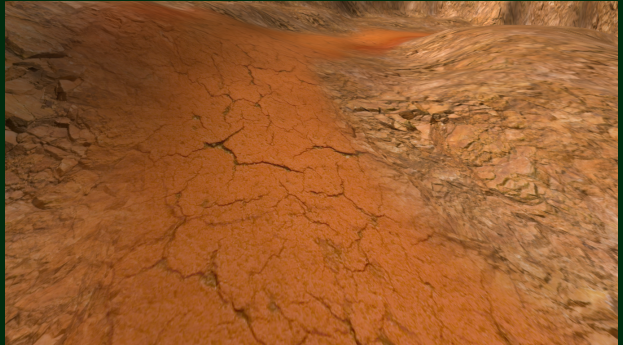
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Graphics

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- Skybox
- Heightmap
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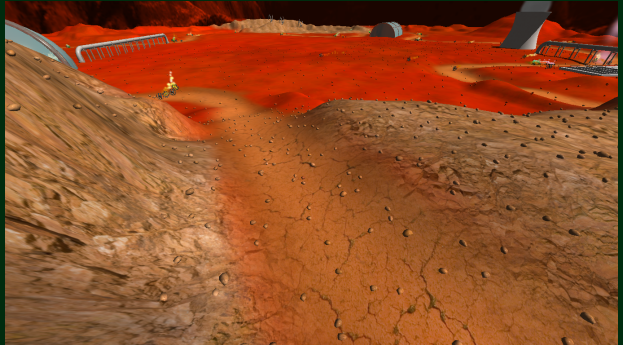- GUI

Multiple Tileable Textures for high quality

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Graphics

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Instanced rocks

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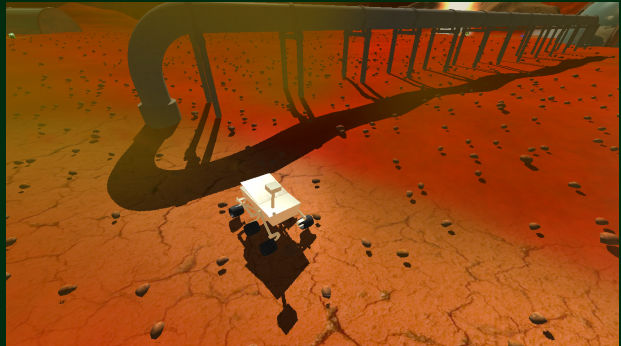E. Béguet, A. Heuvels, C. Janßen, M. Schamberg, P. Voigtlaender

Graphics

Features
- Skybox
- Heightmap
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- Shadow Mapping
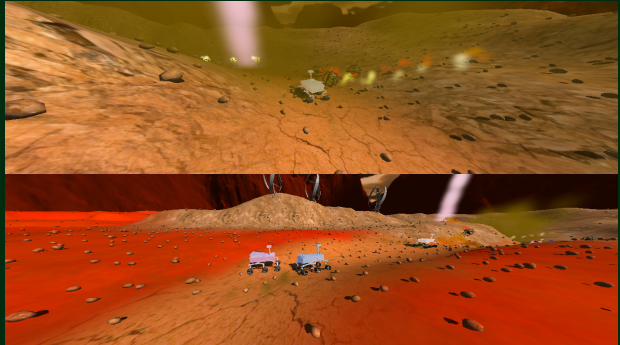- Split Screen
- GUI

Shadow Mapping using orthographic projection

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Graphics

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- Split Screen
- GUI

Split Screen

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Graphics

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GUI

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Graphics

Cubemap Reflections

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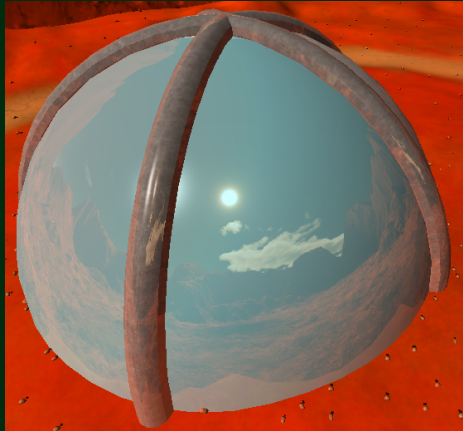
Graphics

Features

- Cubemap Reflections
- Motion Blur
- Particles
  - Fire effect
  - Smoke effect
  - Dust effect
  - Storm effect
    - How it is set up
  - Checkpoints
  - Powerups
  - Soft Particles

Motion Blur

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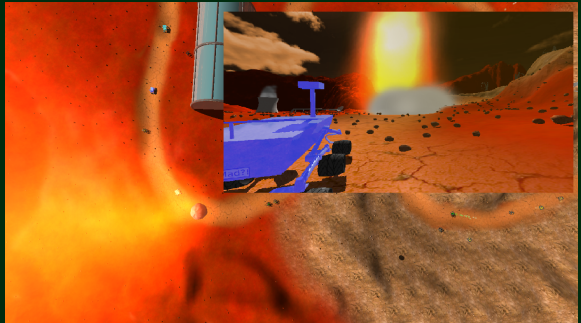 - Powerups
  - Soft Particles

Particles

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Fire effect

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Graphics

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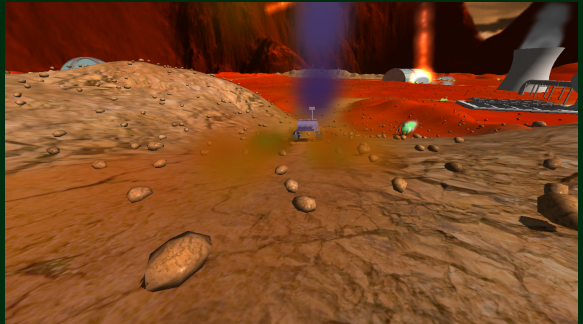 - Powerups
  - Soft Particles

Smoke effect

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Graphics

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Dust effect

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Storm effect: player view

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Graphics

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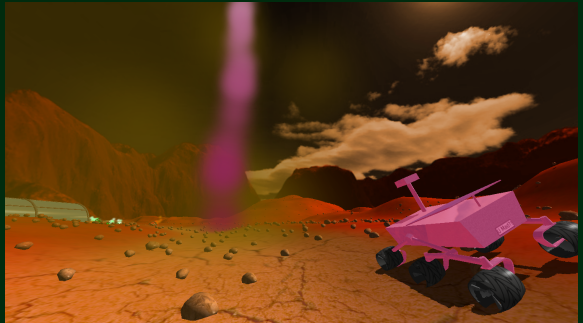 - Powerups
  - Soft Particles

How it is set up

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Graphics

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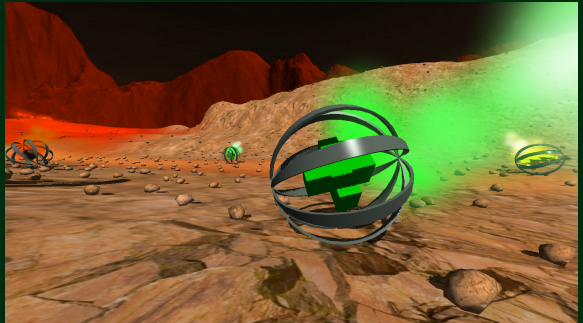   - Powerups
    - Soft Particles

Checkpoints

Graphics

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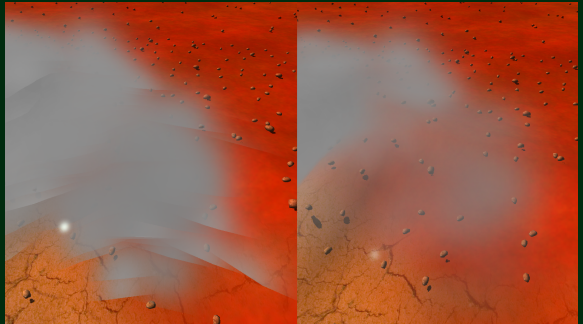 - Checkpoints
  - Powerups
  - Soft Particles

Powerups

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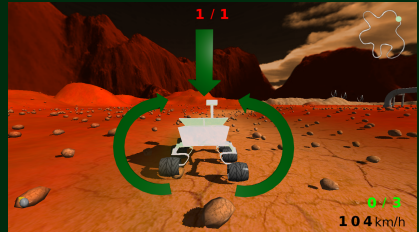
Graphics

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  - Soft Particles

Soft Particles

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Physics

Forces stabilizing the car

Features

- Ray-cast vehicle
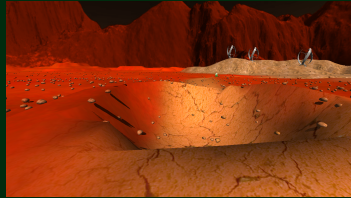- Deformable heightmap
- Power-ups

- Torque around z-axis
- Force pushing down along y-axis
- Added further raycasts (invisible wheels)

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Physics

Features

- Ray-cast vehicle
- Deformable heightmap
- Power-ups

Deformable Heightmap

- Meteorites
- Impact
- Rejuvenation

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Physics

Features

- Ray-cast vehicle
- Deformable heightmap
- Power-ups

Power-ups

- Spawnpoints are loaded out of spawnmap
- Number of power-ups dependend on number of cars
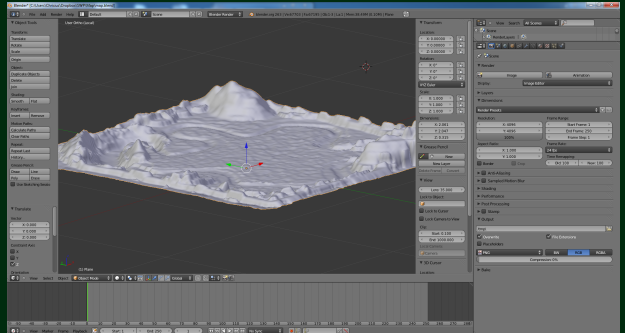- old power-ups are frequently removed and replaced
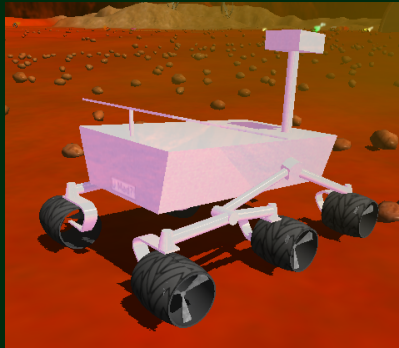
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Content Creation

Assets

- Creation with Blender
- Mars rover
- Powerups
- Wind turbine
- Greenhouses
- Pipeline
- Cooling tower
- Space station

Content creation with Blender

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Content Creation

Mars rover

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Content Creation

Assets

- Creation with Blender
- Mars rover
- Powerups
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Powerups

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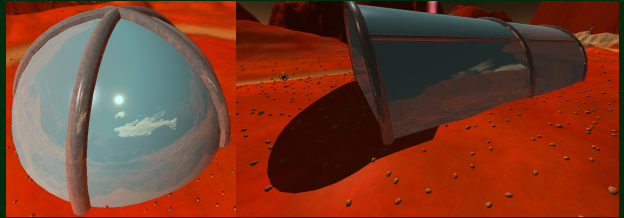**RWTHAACHEN**

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Content Creation

Assets

- Creation with Blender
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- Space station

Wind turbine

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Content Creation

Assets

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Greenhouses

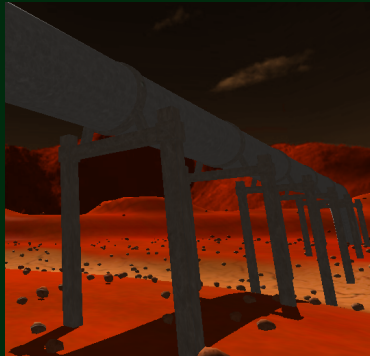**RWTH**AACHEN

Content Creation

Assets

- Creation with Blender
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Pipeline

Content Creation

Assets

- Creation with Blender
- Mars rover
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Cooling tower

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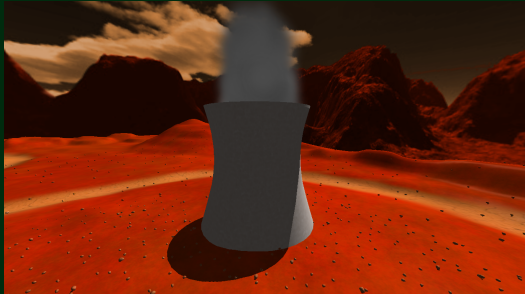
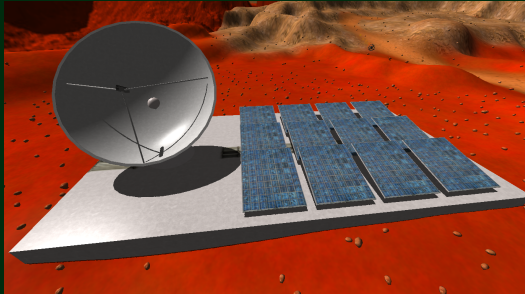**RWTH**AACHEN

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Content Creation

Assets

- Creation with Blender
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Space station

Enjoy!

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Live Demo

I want to play a game

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