

# Game Genres: Shmups

Foundations of Interactive Game Design  
Prof. Jim Whitehead  
January 29, 2007



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UC SANTA CRUZ



# Upcoming Events and Assignments

- RPG Maker tutorial and design sessions
  - ▶ Wednesday nights, 5:30PM, E2 280, led by Nate Emond
  - ▶ RPG Questions in general: (Nate) llama971@gmail.com
- Game Maker tutorial sessions
  - ▶ Thursday, 2-3:10pm, E2 194
- Wednesday, January 31: Next Gamelog assignment
  - ▶ Game from classics list
- Friday, February 2: Drawing-oriented game design
  - ▶ Description of your original drawing-based game
  - ▶ Description of how it worked when you played it
  - ▶ Details on the course website
- <http://www.soe.ucsc.edu/classes/cmpps080k/Winter07/>
  - ▶ All lecture notes and podcasts of lectures

# Genre Specific Game Studies

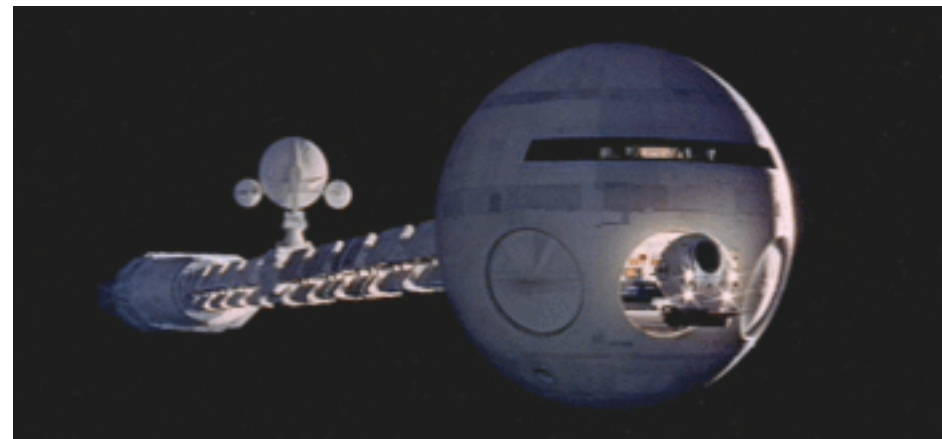
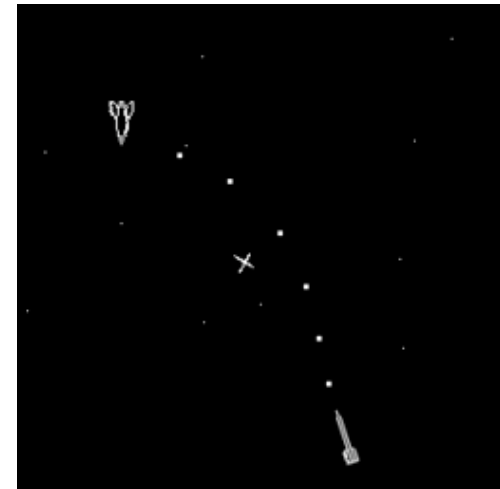
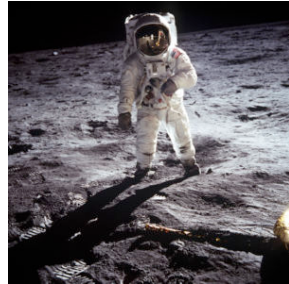
- Most books and articles studying games do so very broadly
  - ▶ Try to make statements applicable to all games
  - ▶ An effort to understand games as form of computational media
  - ▶ A good thing, since our understanding of games is incomplete
- Tends to abstract away genre specific details
  - ▶ Each genre has quirky elements specific to it
    - ❖ In shmups, things like respawning rules, and “shmup snakes”
  - ▶ General game studies tend to deemphasize these points
    - ❖ Often not the best exemplars of points being made
- Designers of games in these genres need to deeply understand genre conventions
  - ▶ To appeal to audience that is deeply versed in these conventions
  - ▶ To understand design freedoms so as to innovate within genre

# Genre Overviews

- This week, will have overviews of three game genres
  - ▶ Shmups: Space shoot-em-ups
  - ▶ Platformers
  - ▶ Role playing games (RPGs)
  - ▶ These are genres that you can more easily make with Game Maker or RPG Maker
- Each lecture will present
  - ▶ Design history of genre
    - ❖ Intent is to cover important points in evolution of design within the genre
    - ❖ Not an exhaustive list of all games in genre
  - ▶ Important design elements within the genre
    - ❖ Genre specific elements of game design
  - ▶ Thoughts on elements of good level design
  - ▶ Demonstrations of some important games in genre

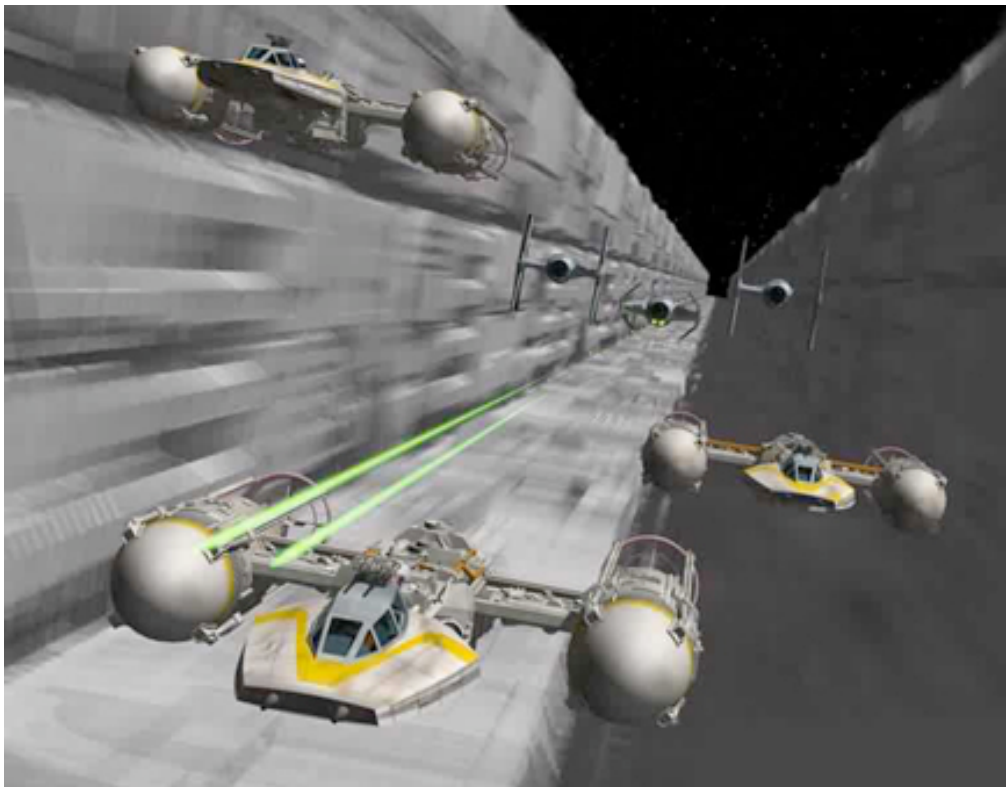
# Pre-history of the Shmup

- Space race, Apollo moon missions (1957-1975)
  - ▶ Apollo 11 moon landing (1969) had tremendous impact on popular consciousness and culture
- Led to general interest in space themes
  - ▶ Spacewar! (1961)
    - ❖ University environments only (needed PDP-1)
    - ❖ Realistic 2D physics in gameworld
    - ❖ Reimplemented as Computer Space (1971)
      - Nolan Bushnell & Ted Dabney: would later found Atari
    - ❖ Influenced later games (Asteroids)
  - ▶ 2001: A Space Odyssey (1968)
    - ❖ Stanley Kubrick film masterpiece
    - ❖ Realistic portrayal of space travel
    - ❖ Theme of human transcendence
    - ❖ **Not** combat oriented



# Ignition: Star Wars

- Star Wars (1977)
  - ▶ Watershed cultural event
  - ▶ Compelling scenes of space combat
  - ▶ Combination of the hero's journey and the Western
  - ▶ Set the stage for....



# Space Invaders: The First Shmup

- Space Invaders (1978)
  - ▶ Easily understandable fictional background, human vs. alien
  - ▶ Simple to learn, hard to master
  - ▶ Huge cultural phenomenon in US and Japan
    - ❖ National shortage of coins in Japan!
    - ❖ Songs written about game's addictiveness!
      - "He's hooked, he's hooked, his brain is cooked"
  - ▶ 1D cardinality: move left or right
    - ❖ Due to this, known as a *fixed shooter*, *gallery shooter*, or *single screen shooter*
  - ▶ First major breakout game since Pong
    - ❖ Opened new directions for computer games



# Space Invaders: Thematic Mother of all Shmups

- **Lone hero**

- ▶ Fighting waves of aliens against long odds
  - ❖ Western notion of rugged individualist hero
  - ❖ Japanese notion of lone samurai
  - ❖ Elements of the kamikaze

- **Xenophobic**

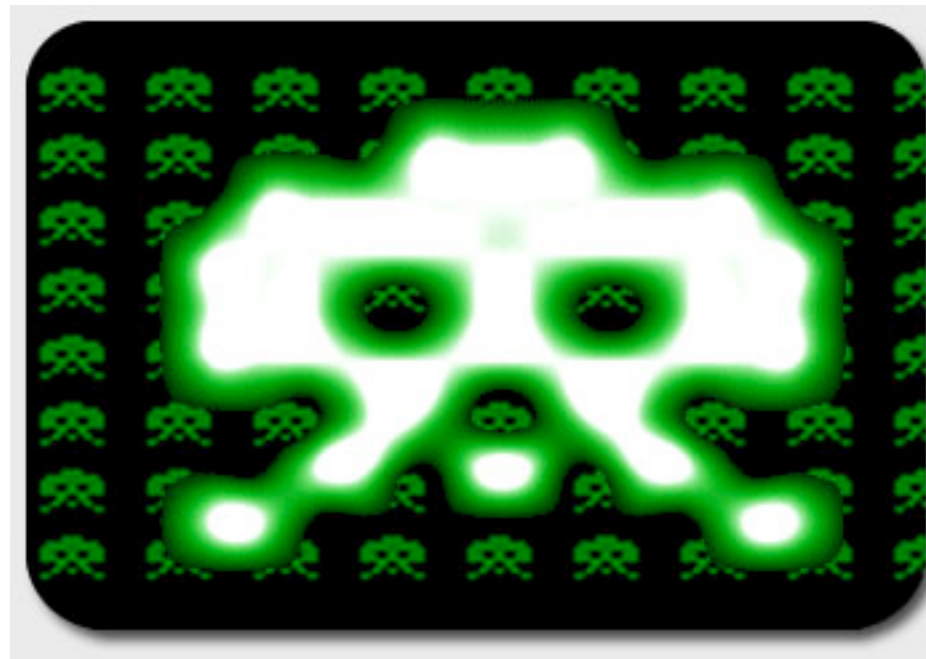
- ▶ It's us vs. them baby
- ▶ Who are they? Not us!

- **Abstract**

- ▶ Clearly not a depiction of reality
- ▶ Abstract representation of a battle

- **Decontextualized**

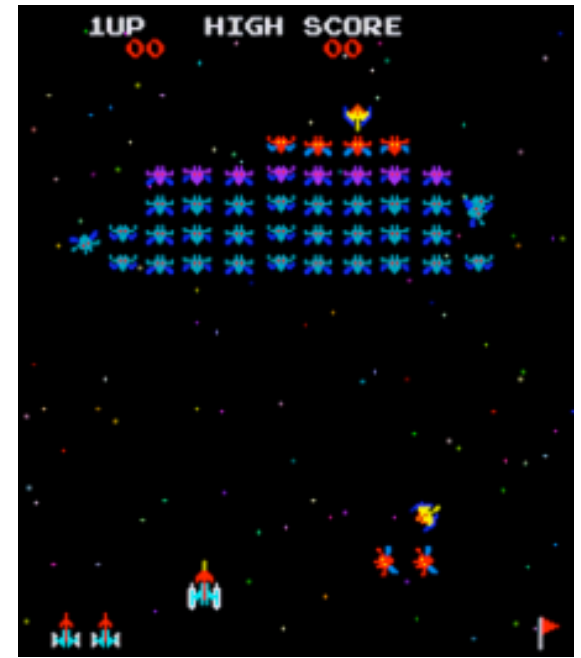
- ▶ What are the aliens like? Why are we fighting them? Why are they fighting us? Do they have families? What does this battle mean in the overall war? *We have no idea.*





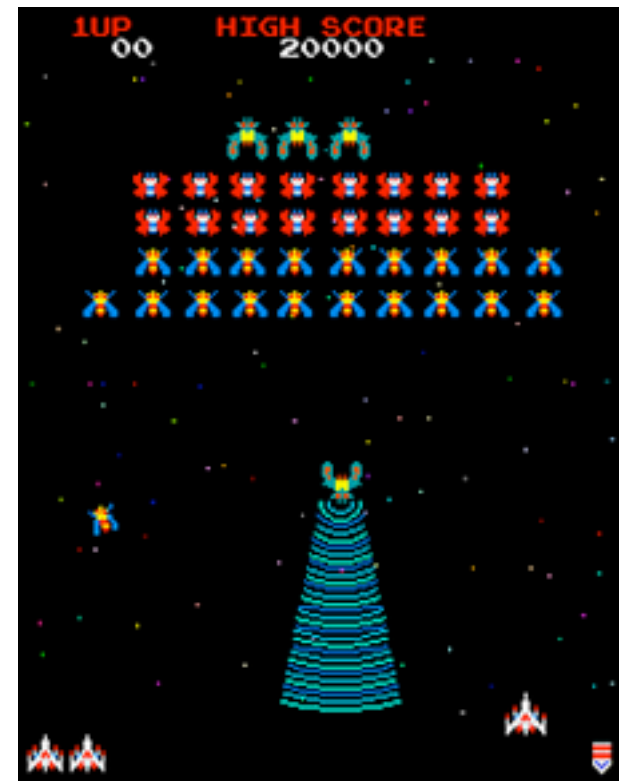
# 1d to the Max: Galaga, Phoenix and Galaxian

- Galaxian (1979)
  - ▶ Improved on Space Invaders with aliens that would dive bomb the player
  - ▶ No bases
  - ▶ Full color, background music
- Phoenix (1980)
  - ▶ First shmup boss (level 5)
- Galaga (1981)
  - ▶ Scoring system awards one value for ships in formation, and a higher value for ships when attacking
  - ▶ Aliens can capture player ship
    - ❖ Possible to recapture for double-fire
  - ▶ Bonus round



# Problems with Fixed Shooters

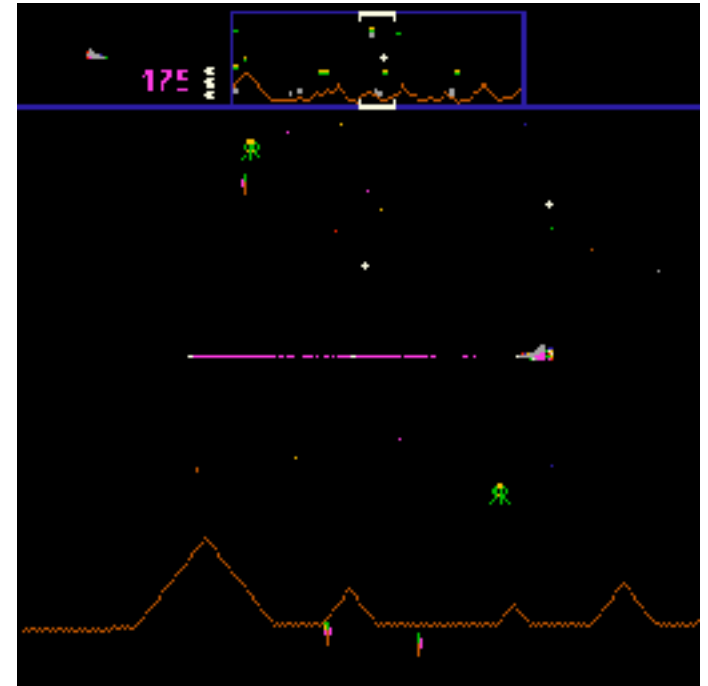
- Challenge types do not vary
  - ▶ Aiming at aliens, dodging bullets and aliens
  - ▶ Learning patterns of alien ships
  - ▶ Not enough variety of challenge
- Too difficult...
  - ▶ New game players were quickly dispatched
  - ▶ Reduces desire to play again
- ... and too easy
  - ▶ Once players learn patterns, can play a very long time
  - ▶ Only required strategy is to memorize alien patterns
- Limited narrative scope
  - ▶ No characters, only ships
  - ▶ No story being told



Galaga

# Defender (1981)

- Breakthrough on multiple levels
  - ▶ Full 2D motion
  - ▶ Wraparound game world
    - ❖ “Scanner” shows radar like view
    - ❖ First *scrolling shooter & horizontal shooter*
  - ▶ Multiple goals
    - ❖ Rescue people
    - ❖ Destroy enemies
  - ▶ Two weapon types
    - ❖ Beam, smart bombs
  - ▶ Permits more complex gameplay
    - ❖ Many more interesting decisions
    - ❖ Track state of people
    - ❖ Tradeoff of clearing an area vs continual movement
  - ▶ Con: fantastically complex button scheme



# Scramble (1981)

- Establishes conventions for horizontal side-scrollers
- Continuous scrolling
  - ▶ In Defender, could move right *or* left
  - ▶ This is a major innovation
  - ▶ Makes it possible to have *level designs*
    - ❖ Positioning of enemies to create player challenge and control experience
    - ❖ Gives designer control over pace of play
  - ▶ Permits a kind of *landscape narrative*
    - ❖ As player progresses through the level, uncovers more about the environment
    - ❖ World and story uncovered in details of revealed landscape
    - ❖ Not possible with 1d waves of aliens, since every level looks the same as the one before
- Fuel challenge: must keep ship fueled



# Zaxxon (1982)

- Horizontal side-scroller
- First game to use isometric projection
  - ▶ Very distinctive
  - ▶ No lasting impact on shmups
- Well developed *landscape narrative*
  - ▶ Fly over asteroid city
  - ▶ Details are uncovered as you progress
- End boss
  - ▶ Zaxxon, the robot
- Fuel challenge
  - ▶ Like Scramble, must keep ship fueled



# Xevious (1983)

- Credited as first vertical scrolling shooter
  - ▶ Mission-X (1982), Zoar (1982), Funky Bee (1982) preceded it
    - ❖ OK, so Xevious is first *influential* scrolling shooter
  - ▶ Well developed landscape
    - ❖ No distinct levels, gradually evolves
    - ❖ Designed placement of enemies
- Strong graphics
  - ▶ Sense of improved realism
    - ❖ Different kinds of land, sea, forest, etc.
- Weak landscape narrative
  - ▶ Levels designed to create challenges, not to tell a story
  - ▶ Scramble and Zaxxon do better



# Gradius (1985)

- With Gradius, shmups genre *stabilizes*
  - ▶ Scrolling over landscape
    - ❖ In Gradius, side-scrolling
  - ▶ Multiple distinct space-themed levels
- Power-up system
  - ▶ Vulgus (Capcom, 1984) brings powerups to shmups
    - ❖ Immediately before better-known 1942
  - ▶ Gradius has *power meter* powerups



SPEEDUP MISSILE DOUBLE LASER OPTION ?

- ❖ Like pinball, each powerup collected moves indicator forward
- ❖ Also introduces “multiple” powerup, for multiple firing
  - Can be combined with other powerup features
- ❖ Adds additional dimension of strategy
  - Which powerup capability should be collected next?

# Exploring Fantasy Narratives

- Two games that explored more fantasy-style settings
  - ▶ Indication that genre is free to be less literal
    - ❖ Improves storytelling capability of landscape narrative
- **Salamander/Lifeforce** (1986)
  - ▶ Introduces the *shmup snake*
  - ▶ A large snake in space
  - ▶ Goofy, but works
  - ▶ A kind of mini-boss
- **Twinbee** (1985)
  - ▶ First “cute-em-up”
  - ▶ Vertical scroller
  - ▶ Brightly colored palette
  - ▶ Whimsical landscape, enemies



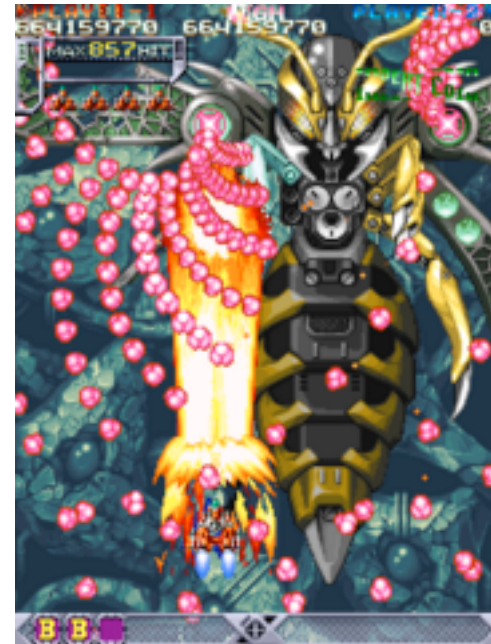


# Golden Age of Shmups

- Once the NES reestablishes the commercial viability of computer games, many shmups are created for consoles
  - ▶ See *Xenocide Files* at [www.shmups.com](http://www.shmups.com)
- In Japan, continued viability of shmups in arcades leads to high quality arcade-first shmups
  - ▶ R-Type is a notable example
- Best games tend to have some innovative aspects, but clearly work within genre conventions
- Following slides will focus on games with distinctive design or gameplay elements

# Manic Shooters

- Games feature staggering numbers of bullets onscreen
  - ▶ Ship often has small area of vulnerability
  - ▶ Also called “bullet hell”
  - ▶ Appeals to the experienced shmup player who desires extremely challenging gameplay
  - ▶ A sign of maturation of the genre
    - ❖ Also a sign of becoming inwardly focused
- **Dodonpachi (1997)**
  - ▶ Absurdly powerful weapons
    - ❖ Powerups galore
  - ▶ Enemies fire copious bullets
  - ▶ Chaining scoring system
    - ❖ Hit enemy within a second of last one to increment



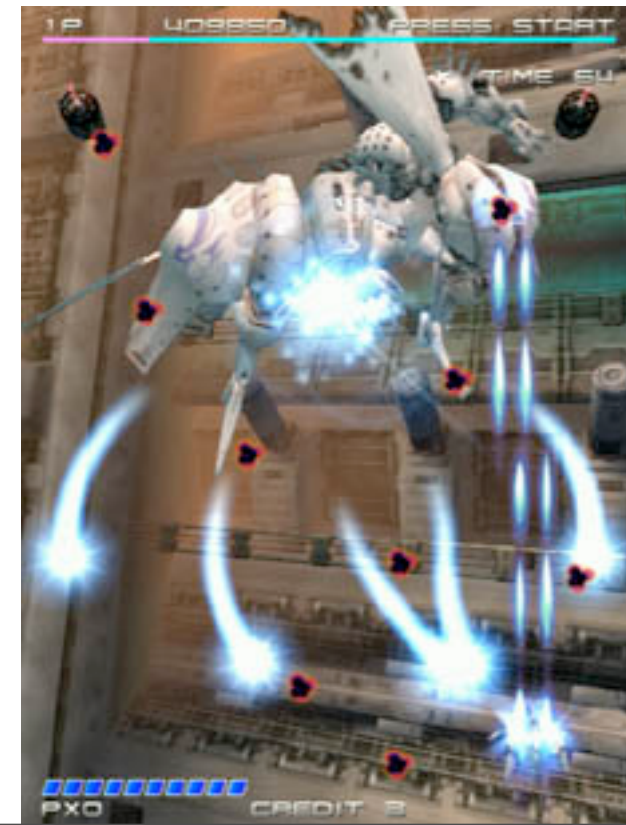
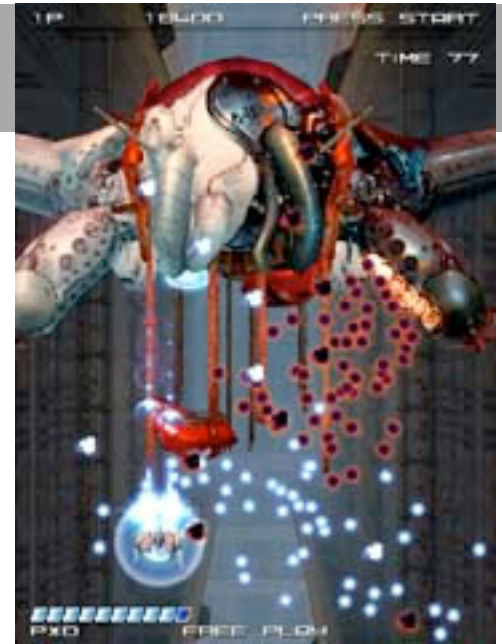
# Radiant Silvergun (1997)

- No powerups
  - ▶ All weapons available at beginning
  - ▶ Emphasizes strategy of choosing best weapon for a given situation
  - ▶ Gives designers more control over user experience, since player weapons always known
  - ▶ Sword is unique weapon for shmup
- Storytelling
  - ▶ RSG has original storyline, very well integrated into level design
  - ▶ Demonstrates *expanded narrative potential* for shmups
  - ▶ Can have *strong characters* in cut scenes
  - ▶ *Motivation* for actions in game



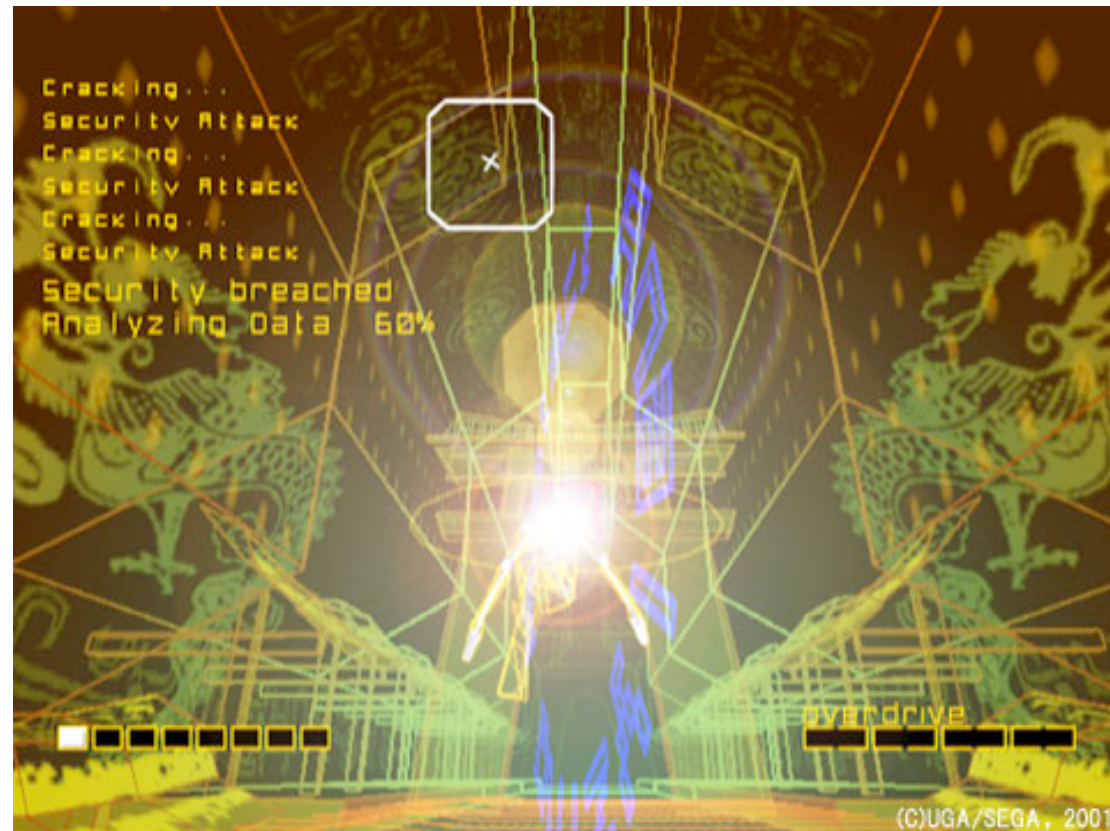
# Ikaruga (2001)

- Emphasizes beauty
  - ▶ Visually appealing
  - ▶ At times feels like work of fine art
- Unique gameplay aspects
  - ▶ Polarity system
    - ❖ Ship is white or black
      - Can be changed by player
    - ❖ Bullets are white or black
      - Only opposite polarity bullet kills
  - ▶ Chaining system
    - ❖ Tied to polarity
    - ❖ Kill enemies with similar polarity in a row



# Rez (2001)

- *On-rails* 3D shooter
- Synchronized music, vibration
  - ▶ Shooting enemies causes changes in musical score
  - ▶ Controller vibrates along with music
- Strong integration of storyline with music, gameplay
  - ▶ Descent into the depths of the supercomputer *K-project*
- Good example of game as art



# Shmups Today

- **Scrollers: occasional console releases**
  - ▶ **Gradius V (2004)**
    - ❖ Explores integration of cutscenes into game
    - ❖ Adheres to genre xenophobia, limiting storytelling
  - ▶ **R-Type Final (2003)**
    - ❖ Large number of ships and powerup weapons
  - ▶ Both games explore use of 3D graphics while preserving 2 dimensions of gameplay
  - ▶ Solid command of genre, very polished games
- **Top-down shooters**
  - ▶ Minor revival led by **Geometry Wars: Retro Evolved (2005)**
- **Japanese solo efforts**
  - ▶ **Shoot the Bullet (2005)**, by ZUN (Junya Ota?)
    - ❖ Player takes pictures to clear enemies, instead of firing bullets

# Directions for Shmups

- What are some design potentials for Shmups?
  - ▶ Push limits of storytelling
    - ❖ Inject strong characters into the game
    - ❖ Plots to motivate actions of player
  - ▶ Improved choreography
    - ❖ View game as a form of dance
    - ❖ Synchronizing movements of player and enemies to achieve aesthetic effect
  - ▶ Use to reinterpret existing media
    - ❖ Shmup as a way to explore meaning of music, literature?
  - ▶ Multiplayer shmup
    - ❖ Create a campaign version of a shmup, where your play is integrated with many other battles of other players as part of ongoing campaign
    - ❖ Interstices between play sessions provides potential for storytelling