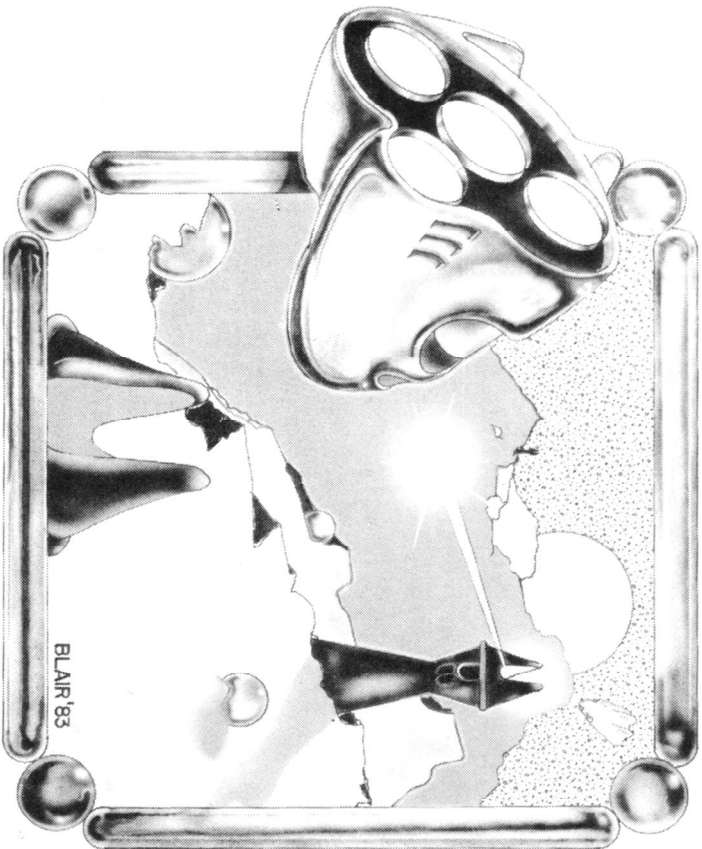


# GRAVITRON



**\$19.95**

**DUAL FORMAT  
For HDOS or CP/M  
Hard Sector Disk**

For HDOS or CP/M and Heath/Zenith H/Z89,  
Z90, or H8 + H19 computers with 32k memory,  
or H/Z100 series computers with CP/M-85.

**APOGEE SOFTWARE**

# GRAVITRON

There's trouble in the Schedar star system, and the Federation of Earth needs your piloting skills. Though the Federation has been able to destroy an enemy fleet that overran Schedar, there's still a grave problem: the enemy installed giant automatic missile launching towers on all twelve planets of Schedar. And Federation ships can't handle the towers, because rare isotopes on the Schedar planets make their anti-gravity drives unusable. That's why they're turning to the best thrust-reaction pilot they have — you.

Can you maneuver your ship to destroy the deadly towers, while avoiding the treacherous terrain and enemy missiles, and while compensating for the constant pull of gravity? The fate of an entire star system is in your hands.

GRAVITRON features a high score list, keyboard or JS-89 joystick input, a silent play option, a game-pause function, and twelve strange (and lethal) planets that may leave you reluctant to come back to Earth.

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GRAVITRON arcade graphics game Version 1.0  
for HDOS or CP/M  
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GRAVITRON is a fast-action arcade-style graphics game. It requires an H/Z89, Z90, or HB-H19 computer with a minimum of 32k memory and the HDOS or CP/M operating system. The CP/M version can also be run on H/Z100 series computers with CP/M-85.

#### FUTURE HISTORY

Contact between the Federation of Earth (a loose alliance of eleven star systems in the neighborhood of the Sun) and the inhabitants of the Schedar system (twelve planets orbiting a massive K-3 star) came about in the year 2317. The Schedans were a peaceful and energetic race who had achieved intrastellar spaceflight and colonized eight planets of their system. The Federation soon constructed warp gates leading to Schedar and established trade relations with the inhabitants, acquiring access to the abundant minerals found on the planets of the system. Among these minerals were certain rare trans-uranic isotopes which emitted a bizarre form of energy known as infra-gravitron radiation. This radiation rendered conventional anti-gravity propulsion methods unusable. Thus all spaceships navigating the planets were forced to use old-style thrust-reaction propulsion. It was this characteristic which limited Federation missions to the planets to an elite group of pilots trained in this nearly forgotten technology.

The Federation's first warning of trouble came when the warp gates unexpectedly shut down. By the time Federation scouts were able to reach Schedar through normal space, they discovered that the entire system had been overrun by a brutal and hitherto unknown race from Beta Cephei. The scouts were able to secretly reactivate the warp gates before being destroyed by Cephans forces.

With the warp gates reactivated the Federation's superior ships were able to dispatch the Cephans fleet at Schedar. But there remained a grave problem: The Cephans had installed planetary defense systems consisting of giant automatic missile-launching towers on all the planets of Schedar. These towers had to be neutralized before the people of Schedar could be free. And there was only one thrust-reaction pilot good enough to take them on: You.

#### STARTING THE GAME

To run GRAVITRON, copy the file GRAV.ABS (in HDOS) or GRAV.COM (in CP/M) from the distribution disk to a SYSGENed disk that has sufficient free space. Boot this disk and type

GRAV

and off you go.

## CONTROLS

The control layout of your spacecraft looks like this:



Orient your ship in any of eight directions by pressing the keys of the H19 or Z100 numeric keypad shown in the pattern above. To apply thrust press the "F" key. This applies a brief force in the direction you have selected. Each time you press the "F" key your ship's engines are turned on for 1/8 second. If you need a large amount of thrust, press the "F" key repeatedly. You do NOT get continuous thrust by holding down the key; you can only get bursts of thrust by pressing it. Remember that there is no friction to slow you down, so if your ship is moving to the right the only way to stop it is to face it left and apply thrust. Also remember that gravity is continually applying a downward force on your ship, so if you don't want to crash into the planet's surface, you'll need to apply upward thrust often. Each pulse of thrust uses one fuel unit.

Fire your ship's missiles with the "D" key. Your missiles fire in the direction your ship is pointed, but the velocity of your ship affects their path. For example, if you are drifting downward and you fire to the right, your missiles will move right but drift downward as well because of your ship's movement when you fired. You have an unlimited supply of missiles and firing them uses no fuel, but only three ship missiles can be in flight at once. To destroy a tower you must hit the top of the tower with your missile, not the base. Exploding fragments of a tower will not hurt your ship.

Your ship's shield renders you invincible against the towers' missiles. Activate the shield by pressing the "S" key; the "SHIELD" indicator in the lower right of the screen will light up. Your shield will remain up for approximately one second. Pressing the "S" key again adds another second to your shield time. You can "stack" your shields by pressing the "S" key repeatedly, but the following conditions apply: Each press of the key uses 5 fuel units. You can stack up to 4 seconds of shield time; pressing the "S" key further will not increase your shield time but will use fuel. When you fire a missile your shields deactivate immediately and you lose any credited shield time.

## YOUR MISSION

When you start the game you'll see the warp gates leading to the four outermost planets of the Schedar system. Let your ship drop straight down into the center of the warp gate, and you'll be transported to the first planet. Since these outermost planets were not colonized, the Cephans did not build an extensive tower

network here. That makes your job a little easier. It won't stay that way for long, though.

Each planet consists of three screens. If you maneuver your ship to the right or left edge of the screen, your view will shift to the adjacent screen of the planet. If you maneuver to the top of the screen you'll leave the planet and pass back through the warp gate from which you came.

One of the indicators at the bottom of the screen is labeled "TOWERS:". It tells you the number of towers that still exist on this planet. Destroy all the towers on a planet and your mission to that planet is complete. The "TOWERS:" indicator lights up when this happens. You can then leave the planet and proceed through the next warp gate to continue your mission. Once you have completed your mission on all of the first four planets, the four warp gates to the next four planets will be displayed. When passing through a warp gate, be sure to drop through the center and not hit the sides, unless you wish to be pulverized.

On the surface of each planet are small round fuel pods which you'll need to collect to keep from running out of fuel. You begin the game with 500 fuel units, and each fuel pod is worth an additional 35 units. Collect the fuel by maneuvering your ship "on top of" (overlapping) the fuel pod.

#### SCORING

Each tower you destroy is worth 50 points. In addition, there is a bonus score awarded when you complete a planet. The amount of this bonus score is shown beneath each warp gate, and at the bottom of the screen when you reach a planet. The bonus amount slowly decreases as you spend time on a planet, so leisurely sight-seeing is not advised.

There is a special bonus available to experienced players. When the game begins, you can skip the first one, two, or three planets by going directly through the warp gate for a more difficult planet. If you successfully complete your mission on this planet, you are awarded the bonus points for all the planets you skipped. This bonus is available only for the first set of four planets and is awarded only for the first planet you complete.

#### HIGH SCORES

When you have destroyed the five ships you started with, plus the bonus ships you receive every 2000 points, the game is over. If your score is one of the five all-time high, you will be asked for your name. Enter your name and a carriage return and it will be inserted into the top five list displayed between each game. High scores are kept in a file called GRAV.SCR. In CP/M, make sure you "log-in" the drive containing GRAV.COM (that is, make it the default drive) because that's where the program will expect to find GRAV.SCR. If the file can't be updated, the terminal will beep but no error message will be displayed. Likely problems are a full or write-protected disk.



## PAUSING THE GAME

A successful mission to all twelve planets can take some time. If you need to pause the game, leave the planet you're on, and when the warp gate screen is displayed press "P". The game will pause, and you can resume it later by pressing any key. You can only pause the game while on the warp gate screen.

## SILENT OPERATION

If the clicks and beeps emanating from your terminal while playing the game annoy you or others, you can solve your problem by playing the "silent" version of GRAVITRON. To do this, run the game by typing the command

GRAV SILENT

You can abbreviate SILENT to S if you wish (i.e., GRAV S).

## JOYSTICK OPERATION

The JS-89 is a low-cost joystick interface that can be used with H/Z89 or Z90 computers containing the 3-port serial interface board with at least one unused port, and an Atari-compatible joystick. (It is available from Greg Saville, Box 5190, San Diego, CA for \$19.95; price subject to change.) If you have a JS-89, you may use it with GRAVITRON by typing the command GRAV JOY or GRAV JOY NNN where "NNN" is the port number IN OCTAL where the JS-89 is installed. Legal ports are:

POSITION ON BOARD	PORT	COMMAND
Top	340	GRAV JOY 340
Center	320	GRAV JOY (standard position)
Bottom	330	GRAV JOY 330

The joystick is used only for selecting the direction of the ship. Shields, missiles, and thrust are still controlled from the keyboard keys S, D, and F as before. Thus you'll need to place the joystick on a flat surface and use one hand to control direction with it, while using the other hand on the keyboard. Joystick holders for the Atari joystick, or Atari-compatible joysticks with suction cups, are available and afford better control.

## HINTS

When you first try to play this game, controlling your ship might seem almost impossible. It isn't. You can become extremely adept at maneuvering the ship with some practice. The key to the game is this: Don't get your ship moving too fast. Maneuver slowly and patiently and you'll stay in one piece. Move too fast and you'll end up all over a cliff.

As you destroy each tower on a screen, the remaining ones become more aggressive. Thus it is not a good idea to leave the most difficult towers for last. If a tower is giving you a lot of problems, observe its missile-firing pattern. There may be a blind spot that you can use to your advantage.

With practice and experience it becomes possible to complete your mission to all twelve planets. Good luck, Commander!