

Summary of bugfixes made to the original game in *VIC 20 Ultima II & C-64 Ultima II Grand*

- Nearly all the towns on other planets were partially corrupted: the bottom four map rows were repeated, town names were wrong or missing, Pluto's map was incomplete, a corrupted dungeon on Pluto mistakenly loaded a town map binary instead of dungeon data, and Tommersville was missing entirely. All of these have been restored using the original data files from the DOS version (at least maps 82, 85, 71, 61, 41, 32, and Tommersville)
- NPC number 0 (out of 32 per town) couldn't be attacked, talked to, or given gold, making one person per town (often a guard) untouchable
- Boarding and taking over a pirate vessel now removes the associated monster, preventing players from endlessly duplicating frigates by repeatedly sailing away and boarding again
- You can now strike monsters across the map wrap boundary (such as on the bridge between continents in 300 B.C. and 1990 A.D.)
- The dungeon monster drawing code was unfinished: only the closest monster was drawn correctly. Though the game tracks monsters a few steps straight ahead, rendering them beyond the nearest tile only produced seemingly random pixels. A partially implemented feature to display monsters at different distances was left incomplete in the code, and there was one unused test monster #0 made for this drawing method. That's now cleaned up: erroneous pixels are removed, and monsters are only drawn where their display data is valid
- Dying in space right after getting the first shuttle from Pirates Harbour creates a savegame in the middle of the ocean (standing on a rocket ship, which you can board and launch again - if you have Tri-Lithium)
- Several BCD values could wrap around to zero after reaching 99 or 9999. Stat boosts from Hotel California, item counts, food, experience, and gold are now properly capped at their maximum values
- Price evaluation depends on charisma + intelligence, which are BCD values, but were summed as non-bcd without overflow check. If the sum wrapped around to a low value 0-20 (usually when either Charisma or Intelligence was boosted over 60) then food prices went suddenly very high. Fixed by capping the result to a maximum of 255
- Apparent spawning bug found, but not fixed because it changed the gameplay too much: There's a CMP/AND mismatch in randomizing the y-coordinate of spawn monsters. AND doesn't set carry flag, so sometimes there is a noticeably long pause (like 3 minutes) in spawning monsters, caused by the last calculation of the table-shuffle-type random number generator leaving the the carry flag set. This happens when there's enough certain large numbers in the randomizer pool. For the same reason, the randomizer was not replaced by a better RNG
- In dungeons, nearby map positions were not checked when a torch went out, allowing players to walk through walls based on the "last seen" wall states. Upon entering, you often couldn't move in the dark. Now, it's possible to complete dungeons without light—if you have a map to follow
- Raster split was one pixel off on both PAL and NTSC, fixed (C-64)

Improvements

- Now all code, game data and player data fit on one disk side instead of 2-3
- Optional Apple II style palette on C-64, use the Yell command and yell "PALETTE" (C-64 only). VIC 20 version uses the Apple II style palette only
- Yell "ELON MUSK MODE" for a luxuriously unfair H.P. and gold cheat
- You can now also use the emulator-friendly cursor keys to move
- Line draw slightly optimized and dungeon monster drawing rewritten (VIC 20)