the fuel cells that generate electricity. The astronauts would dock the resupply module at one of the docking positions of the multiple docking adapter and activate the workshop again. Then they would get busy and continue the scientific program. You saw during your tour the 21 experiments that we are preparing. Most of these experiments would go up on the first flight of the series, but some of them would be exercised only now. Some are medical experiments, some are experiments in support of DOD, and some are just pure scientific tasks.

Finally, with the fourth flight we would send up our Apollo Telescope Mount. This flight is again unmanned. After it is in orbit, the manned Service and Command Module would pick it up, place it into another part of the multiple docking adapter and then dock itself again into another position. That's how we come to what we call our orbital cluster configuration.

We would activate this complete cluster for up to 56 days and during that time carry out all our astronomical research. Even after this period, the entire cluster, of course, remains in orbit. The "orbital hotel" is there, the mapping module is there, the astronomical telescope is there, and if we continue to send new resupply modules, we could continue the operation of the entire scientific complex indefinitely. Gradually, of course, the oribit would decay, but it happens very slowly. It is entirely feasible to use the rocket engine in the Service Module to kick the entire cluster back up some 10 or 20 miles, thereby increasing the lifetime another 10 to 15 years. So the orbital workshop cluster with its scientific modules, and supported by resupply modules, really offers us an open-end scientific program in orbit. It puts us in a position to decide at any time to either continue it for another few years or to say, "We've learned from this cluster as much as we can and on the basis of all the things we've learned, we should now build a better second generation space station."

That, in essence, is the idea. We call the whole concept the Apollo Applications Program because we follow the ground rule that existing Apollo hardware is used to the greatest possible extent.

This chart shows the cluster again in more detail. Here's the telescope mount, the mapping module, service and command module, and here's our orbital workshop.

From the cluster I have just shown you, we can progress to other more sophisticated concepts and still adhere to the same basic principle of using Apollo hardware. For instance, should we find out in all these tests that artificial gravity over long periods of time is not a good thing, we could keep a spent second stage of the Saturn V attached to an S–IVB workshop which we have completely outfitted on the ground. That is, in this case, we would not put propellants into this S–IVB stage and use its propulsive force to climb into orbit. Rather, we would equip all our laboratory and living rooms in that stage on the ground and put that "prefabricated orbital workshop" in orbit with the first and second stages of a Saturn V. Now, by putting a spin on this thing, which we could do with the existing attitude control nozzles on the S–IVB, the orbital workshop would revolve around the center axis using the empty S–II stage as a counterweight. The rotation would produce artificial gravity on the various floors of