

Introduction to SPURS Moorings Transcription

So now we want to talk about the moorings. During SPURS we deployed 3 moorings. The Woods Hole mooring which I'll call the Flux mooring, and the 2 other moorings which I'll call the Prowler moorings. There they are. The Prowler moorings are from the Pacific Marine Environmental lab, a NOAA lab in Seattle; and the WHOI moorings from Woods Hole Oceanographic Institution in Woods Hole Massachusetts. Right. So this is a quick movie to show some of the samplings we did in and around the moorings. The Woods Hole mooring is really the centerpiece of the entire experiment. We're doing pretty much everything around and in association with that mooring. It's the centerpiece of everything.

The flux mooring, the Woods Hole mooring, this is it. This is a picture of the surface part of this mooring. You can see there is a weathervane to keep it oriented towards the wind. It's bristling with instruments, instruments to measure wind speed, rainfall, humidity, temperature; any other meteorological variable that you can think of is measured by this buoy. The buoy is filled in this bay with batteries. It's got all kinds of batteries to keep itself going, and it's got a big area for flotation. There's instrumentation stuck underneath down here.

This next one is just a picture of the float, the floating part of it. It's made of synthetic foam, very dense foam. Now watching the mooring get deployed is quite an amazing show. So here is this mooring that weighs several thousand pounds. It's being lifted up by one of the cranes on board the ship, and put over the side. We're deploying the mooring in close to 5000 meters of water. There's about 3 miles of rope, chain, and cable that's attached to the bottom of this mooring, and a big huge giant anchor that anchors it to the bottom. Also, between the surface of the bottom there is probably 60 instruments bolted on to all of this cabling and rope. So it is really quite an amazing observatory that they put out there. It's really huge. Putting this mooring out is almost like a choreographed dance. It's really quite a sight to watch this go on. It's all so well-orchestrated. It's really fun to watch all of it.

This is some of the meteorological instrumentation on board. We're using the meteorological instruments basically to measure what we call surface fluxes. Surface fluxes are the motion of water and heat out of the surface of the ocean and into the atmosphere, or out of the atmosphere and into the ocean. This is all about measuring surface heat and water flux. That's what it's all about.

This just gives you some of idea of the type of scientific value that we are getting out of this instrumentation. This is a cumulative picture of the evaporation that was going on, and the precipitation. The light blue is the water that's being sucked out of the ocean and put into the atmosphere. The heavy blue is water that is being taken out of the atmosphere, and put into the ocean. This is a relatively evaporative area. This area will get a lot of evaporation, and a lot of water leaving the surface of the ocean, and going up into the atmosphere. That's what we expected. It's interesting to see how much it goes in fits and starts. Like there's no rain at all for a while, then suddenly there's a big jump, and then there's no rain, and then a big jump, then no rain. It goes in quite real jumps. We're still trying to sort out all of this, and how all of it works in terms of balance in the surface layer.