WBS	Chinese Name	Task Name	Duration	Start	Finish
2	**硅径迹探测器关键技术验证**	**Key technology verification of silicon track detector**	**1261 days**	**18/5/1**	**23/2/28**
2.1	**力学支撑结构**	**Mechanical support structure**	**934 days**	**18/5/1**	**21/11/26**
2.1.1	探测器模块几何排布优化	Layout Optimization	436 days	18/5/1	19/12/31
2.1.2	探测器模块的结构初步设计	Preliminary design of ladder supporting structure	130 days	18/5/1	18/10/29
2.1.3	探测器整机结构初步设计	Preliminary design of detector supporting structure	260 days	18/10/30	19/10/28
2.1.4	支撑结构的工程图设计	Engineering plot design of supporting structu	523 days	19/5/1	21/4/30
2.1.5	制造模块的力学支撑结构样品	production of prototype of ladder support	87 days	20/12/31	21/4/30
2.1.6	探测器模块的结构最终设计	Final design of ladder supporting structure	43 days	21/5/3	21/6/30
2.1.7	探测器整机的结构最终设计	Final design of detector supporting structure	416 days	19/10/29	21/6/1
2.1.8	制造探测器整机支撑结构	Manufacture supporting structure of detector	128 days	21/6/2	21/11/26
2.1.9	完成所有力学支撑结构的研制	Complete the Manufacture of all mechanical support structures	0 days	21/11/26	21/11/26
2.2	**传感器**	**The sensor**	**919 days**	**18/5/1**	**21/11/5**
2.2.1	传感器像素内的电子学设计，抗辐照元件设计	Electronics design in sensor pixel, design of anti - irradiation element	170 days	18/5/1	18/12/24
2.2.2	外围数字电路、触发、时钟与电源等模块设计，与芯片抗辐照性能模拟	Peripheral digital circuit, trigger, clock and power supply ladder design, and chip anti-radiation performance simulation	261 days	18/5/1	19/4/30
2.2.3	第一次多项目晶圆（MPW）流片	1st MPW	100 days	19/6/17	19/11/1
2.2.4	第二次多项目晶圆（MPW）流片	2nd MPW	90 days	20/2/18	20/6/22
2.2.5	整合全功能的小面积芯片设计	Integration of fully functional small area chip design	190 days	19/5/1	20/1/21
2.2.6	第三次多项目晶圆（MPW）流片	3rd MPW	108 days	21/1/1	21/6/1
2.2.7	设计大面积，全功能的传感器芯片	Design large area, full function sensor chip	328 days	20/5/13	21/8/13
2.2.8	第一次工程批硅晶圆加工	First engineering batch silicon wafer process	60 days	21/8/16	21/11/5
2.3	**读出电子学与数据获取系统**	**Readout electronix and data acquisition system**	**1066 days**	**18/5/1**	**22/5/31**
2.3.1	为初次MPW的芯片研制前端电路板	Development of the front end circuit board for the initial MPW chip	261 days	18/5/1	19/4/30
2.3.2	研制单个传感器芯片的数据获取系统	Development of data acquisition system for a single sensor chip	220 days	19/5/1	20/3/3
2.3.3	ladder的读出电子学	ladder readout electronic	218 days	20/8/31	21/6/30
2.3.4	研制单个探测器模块的数据获取系统	Development of data acquisition system for a single detector ladder	472 days	20/3/12	21/12/31
2.3.5	原型机的读出电子学	Prototype readout electronic	132 days	21/7/1	21/12/31
2.3.6	研制探测器原型机的数据获取系统	Development of data acquisition system for the prototype detector	107 days	22/1/3	22/5/31
2.4	**探测器原型机整体设计与组装**	**The overall design and assembly of the prototype**	**1066 days**	**18/5/1**	**22/5/31**
2.4.1	制定探测器模块的组装流程	Develop the assembly process of detector ladder	260 days	18/5/1	19/4/29
2.4.2	制定探测器原型机的组装流程，开发自动组装系统	Develop the assembly process of detector prototype and develop the automatic assembly system	430 days	19/4/30	20/12/21
2.4.3	探测模块模型试制	detector ladder trail production	66 days	21/4/30	21/7/30
2.4.4	组装与调试首批探测器模块	Assemble and test the first detector ladder	38 days	21/11/24	22/1/14
2.4.5	组装与测试探测器模块	Assemble and test the rest of detector ladder	75 days	22/1/17	22/4/29
2.4.6	组装与调试探测器原型机	Assemble and debug detector prototype	22 days	22/5/2	22/5/31
2.4.7	完成探测器原型机的组装调试	Complete the assembly and debugging of detector prototype	0 days	22/5/31	22/5/31
2.5	**测试与数据分析**	**Test and data analysis**	**1086 days**	**19/1/1**	**23/2/28**
2.5.1	对第一次MPW芯片做测试	Test 1st MPW chip	157 days	19/11/4	20/6/9
2.5.2	对第二次MPW的芯片做测试	Test the second MPW chip	93 days	20/8/4	20/12/10
2.5.3	对第三次MPW的芯片做测试	Test the third MPW chip	53 days	21/6/2	21/8/13
2.5.4	对工程批芯片做测试	Test engineering chip	12 days	21/11/8	21/11/23
2.5.5	**束流测试与数据分析**	**Beam testing and data analysis**	**1086 days**	**19/1/1**	**23/2/28**
2.5.5.1	**束流测试模拟、重建和分析软件开发**	**development of the simulaiton, reconstruction and analysis software**	**784 days**	**19/1/1**	**21/12/31**
2.5.5.1.1	模拟软件开发	development of the simulaiton software	261 days	19/1/1	19/12/31
2.5.5.1.2	重建软件开发	development of the reconstruction softwa	784 days	19/1/1	21/12/31
2.5.5.2	分析软件开发	development of the analysis software	784 days	19/1/1	21/12/31
2.5.5.3	束流测试实验	Beam test experiment	60 days	22/6/1	22/8/23
2.5.5.4	数据分析	The data analysis	85 days	22/8/24	22/12/20
2.5.5.5	发表测试结果，撰写终期报告	Publish test results and write final report	50 days	22/12/21	23/2/28
2.5.6	完成项目终期报告	Complete the final project report	0 days	23/2/28	23/2/28