PynPoint 2.x Project Management

Some words about Scrum:
Scrum is a project management method commonly used for small software projects. It is structured in so called **sprints** beginning with a **sprint planning** (What is the goal of the sprint?, milestones…) and ending with a **sprint review** (Presentation of the results, open tasks…). Moreover, short daily (I would suggest weekly Skype/Hangout) **Scrum meetings** check the process and trend of the sprint.

More information about scrum:
https://en.wikipedia.org/wiki/Scrum_(software_development)

Sprint 1 (30.05 - 17.06) (60 h)

Sprint Planning: 27.05
Sprint Review: 21.06
Goal:
In this sprint an architecture for the new PynPoint package is developed and implemented that:

- capsules inner functionality from the user-interface
- keeps the old interfaces of the PynPoint-PSF-subtraction
- is extendable for new algorithms
- is extendable for different input data types
- offers a variable order of the processing steps
- has a central step-independent data management system using .hdf5 files
- provides interfaces/abstract classes for shared functionality (looping over images, adding flags to the heads …)

Furthermore, a subversion needs to be set up (use old PynPoint SVN?) for the project.

Task	Needed Time	Spend Time	priority
Sprint planning (tasks, time, priorities) (FINISHED)	2	2	HIGH
Read and understand the current PynPoint code (6 h). Finde issues and open TODOs in the code and list them (2h). Modelling the code using UML (3h). List public interfaces (3h) (FINISHED)	14	13	NORMAL
Developing the class structure of the new PynPoint using UML under consideration of extendability, old interfaces, functionality capsuling and central data management. (Make at least 2 solutions) (FINISHED)	8	7	NORMAL
Implementation of the UML class structure (FINISHED)	10	6	NORMAL

Task	Needed Time	Spend Time	priority
Implementation of the data management (FINISHED)	20	19	NORMAL
Code documentation and first tests (FINISHED)	4	11	NORMAL
Set up Subverion (FINISHED)	2	2	HIGH
TOTAL	60	60	

Sprint 2 (20.06 - 15.07) (70 h)

Sprint Planning: 23.06 (14:00)
Sprint Review: 11.07 (14:00)
Goal:

In this sprint the different Pipeline algorithms such as:

- bad pixel cleaning
- dark and flat subtraction
- background subtraction
- image alignment
- wavelet time denoising
- PSF modulation and subtraction

are implemented.

Task	Needed Time	Spend Time	priority
Sprint planning (tasks, time, priorities) (FINISHED)	2	2	HIGH
Implementation PSF Subtraction (PCA) (old PynPoint) (FINISHED, SEE OPEN TASKS)	15	12	HIGH
Implementation data preparation (old PynPoint) (FINISHED)	10	9	HIGH
Wrapper to let most of the old test cases run. Wrapper (10h), Test Cases and CI (8h) (FINISHED)	18	28	HIGH
Implementation PCA Background subtraction	18		LOW
Implementation PCA Background preparation (Star location, pre-cutting …)	7		LOW
Implementation bad pixel cleaning: Sigma	2		NORMAL

Task	Needed Time	Spend Time	priority
Implementation bad pixel cleaning: Map creation (2h) + Spectral deconvolution (4h)	6		LOW
Implementation Image alignment (2h), initial gaussian bug fix (2h) and PSF cutting (1h)	5		NORMAL
Implementation angle calculation	2		NORMAL
Implementation Image denoising (Wavelets)	2		LOW
Implementation Time denoising (Wavelets)	8		LOW
Implementation Time blocking (Wavelets)	2		LOW
Implementation Dark current and Flat subtraction.	2		NORMAL
Reading Tools for different datasets	5		NORMAL
PynPlot methods (old PynPoint) (8 h) or other writing Tools (8 h)	16		LOW
Simple Tools for accessing as numpy array	2		NORMAL

Task	Needed Time	Spend Time	priority
Code Documentation 1/3 of implementation time (19 h reserved)	40		
Total implementation time	122		
Total	162	51	
Total High (incl. Documentation)	60	51	
Total Normal (incl. Documentation)	24	0	
Total Low (incl. Documentation)	79	0	

Sprint 3 (18.07 - 19.08) (80 h)

Sprint Planning: 12.07 11:00
Sprint Review: 15.08 - 19.08 (TODO)
Goal:

- Documentation using sphinx
- Unit Tests
- BUG Fixing
- Improving the usability (GUI, Tutorial …)
- open tasks from sprint 1 and 2
- JSON Workflow

Task	Needed Time	Spend Time	priority
Sprint planning (tasks, time, priorities)	2	1	HIGH
Documentation using sphinx (Read Code documentation a second time, Check if the result on the web side looks good)	6		
Additional online documentation which explains: **- the idea of the pipeline (i.e. ports, processing and data management) (5h)** **- how to write own processing modules (5h)**	10		
Unit Tests for the Pipeline architecture **- Processing 6h** **- DataIO 10h** **- Pypeline 6h**	22		
Unit Tests for the Pipeline modules **(Time depends on the number of existing modules)** **Current Modules:** **- StackAndSubsetModule** **- ReadFitsCubesDirectory** **- WriteAsSingleFitsFile** **- Hdf5ReadingModule** **- Hdf5WritingModule** **- PSFdataPreparation** **- MakePCABasisModule** **- MakePSFModelModule** **- CreateResidualsModule** **2,5 h per Module**	22,5		

Task	Needed Time	Spend Time	priority
JSON Workflow: **(Time depends on the number of existing modules)** - **10 h for interfaces** - **1 h per module (current 9h)** - **8h test cases** - **6h Documentation (in code)** - **2h Documentation for “how to write own modules”**	35		
GUI: - **planning and design (~5h)** - **class structure (~30h)** - **connecting with package implementation (~30h)** - **more implementation (~10h)** - **testing (~10h)**	85		
Tutorial	15		
spare time for BUG FIXES	8		HIGH
Open Tasks Sprint 1 and 2 **NORMAL 24h** **LOW 79h**	103		
Total	306,5		

???? Sprint 4 (Sep. 2016) (30 h) ????

Sprint Planning: TODO
Sprint Review: TODO
Goal:

———More detailed description in sprint planning ———

- open tasks
- release
- fix issus after release